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Hugh Cecil Earl of Lonsdale.

riery Improv'd: or, A Compleat Treatise upon the Art of Farriery. Wherein is fully explained the nature, structure, and mechanism of that noble and useful creature, a horse, the Diseases and Accidents he is liable to, and methods of cure. Set down in as clear and intelligible a manner as the subject will admit of. The Use and Abuse of the Science discover'd; whereby any gentleman may be able to judge for himself, whether or no he is imposed upon by ignorant *Grooms* and other *Pretenders* to this art. Together with many necessary and useful *observations* and *remarks* concerning the choice and management of Horses. Likewise an account of Drugs and mix'd Medicines used in *Farriery;* with some remarks upon their genuineness and adulteration; and their several prices, set down alphabetically at the end of the Work. Sixth Edition. By **Henry Bracken, M.D.,** Author of the Notes on Burdon.

——— Ubi Equos mercantur, opertos,
Inspiciunt: ne si Facies (ut sæpe) decora
Molli fulta Pede est, Emptorem inducat hiantem
Quod pulchræ Clunes, breve quòd Caput,
Ardua Cervix.—HOR.

London. 1749.

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Printed for J. Shuckburgh, at the Sun, near the Inner Temple-Gate, Fleet Street; and W. Johnston, at the Golden Ball, in St. Paul's Church Yard.

(732)

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OR, A COMPLEAT

TREATISE

UPON THE

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TO

Sir *Nathaniel Curzon*

BARONET.

SIR,

I T is with the greateſt Pleaſure and Satisfaction that I have an Opportunity of publiſhing the following Pages under your Patronage and Protection.

No one can be ignorant how ready you are, upon all Occaſions to promote any Thing which aims at the Publick Good. And if theſe my Labours prove of Uſe or Benefit to Mankind, in informing them how to cure the Diſeaſes which infeſt that Uſeful Creature a Horſe, I muſt confeſs the Acknowledgment chiefly due to you, who firſt engaged me to treat more fully upon this Subject than I had formerly done in my Notes upon Captain *Burdon's Pocket Farrier*.

YOU are ſenſible, no doubt, of the great Loſſes daily ſuſtained for want of better Helps in the Farrier's Province. And I need not tell you, that theſe are generally a very ignorant Set of Men, whoſe Arguments are weak and inconcluſive.

WHATEVER Succeſs this new Attempt may meet with, I could not forbear making an Offer of it to you, as a Regard due to your publick Merit. Your Deportment in every Station muſt be truly acknowledged that of a Gentleman, and in all Reſpects becoming a faithful Repreſentative of your Country; for in that Capacity you have indeed merited the Eſteem of all who are deſirous of the publick Safety. And it will appear to the World, whenever there ſhall be Occaſion for your farther Aſſiſtance, that no one can be more ready to maintain our ancient Rights and Liberties.

THIS we may the more reaſonably expect from you, as you are not only poſſeſſed of Qualifications ſuited to the nobleſt Actions, but alſo favoured by the Almighty with ſuch a plentiful Fortune, that has placed you far above the Reach of Bribery and Corruption, and that Meanneſs of Spirit ſo remarkably apparent in the cringing Sycophant.

I CANNOT otherwiſe expreſs my Gratitude for your kind Recommendation of this Work, than by teſtifying, in the moſt publick Manner, how much I am,

SIR,

Your moſt devoted,

and moſt obliged

Humble Servant,

Lancaſter,
June 12,
1737.

HENRY BRACKEN.

THE PREFACE.

TO *attempt any Thing for the Improvement of uſeful Arts, is a Debt that every capable Perſon owes to the Publick, all Civil Societies having a Right to the Property of private Perſons for the common Good.*

I muſt ſubmit the following Pages to the Cenſure of the World, but I beg to be judged by capable Judges; for it is not every Pretender to Medicine (of how great Repute ſoever) that is a competent Judge of ſome demonſtrated Truths.

I do not ſay that the Practice of Phyſick ever will be, much leſs that it now is, the Object of Mathematical Certainty: But this I dare aſſert, that what Im-

Improvement there have been, or are likely to be made in the Theory of Medicine, are all under the Conduct of Arithmetick and Geometry.

A human Body is a curious Machine, and so is that of every Creature through the whole Creation; for the component and constituent Parts of a Horse are subject to the same Laws of Motion as that of a human Body, and both these to the same Laws by which the infinitely wise GOD *governs the Universe: For both Man and Beast are composed of Solids and Fluids, which are governed by the Laws of Gravitation, Impulse, and Reaction; and what Changes are brought about in the Animal Oeconomy, by the Motion of Matter, under the Conduct of these Laws, can no way be estimated so well as from the Mathematicks.*

Let us not wonder, then, to see a Physician take Pen in Hand, in order to write down a Discourse upon the Distempers in Horses, seeing (as I have said before) the Property of Body is alike in human and brute Creatures: And, besides, there is full as much Learning required to treat tolerably upon this Subject, as there is in compiling any other physical Treatise; which Truth I could plainly make appear, from several Circumstances, but that my Time at present forbids it. Therefore, I say, let not my Brethren murmur and complain at me, as if I were debasing the Profession, seeing it is certainly Fact, that he who cannot write sensibly about the Distempers in brute Creatures, is not fitly qualified to prescribe for Man, by reason 'tis plain he has not studied Nature thoroughly.

It is a received Maxim, that Medicine should begin where Philosophy ends; and it is undoubtedly an essential Qualification in a Physician to be a good Philosopher: But all the Philosophy that has yet appeared in the World, is no better than trifling Romance, except what has been writ by the glorious

Sir

Sir Isaac Newton, *who was an Honour to the* British *Nation.*

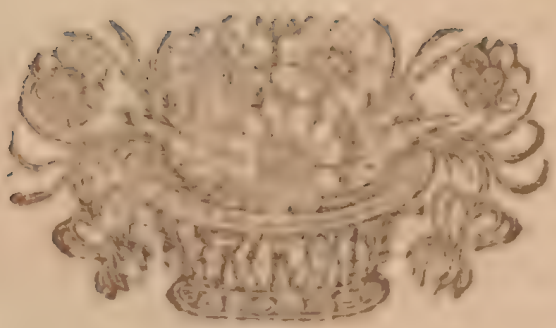
This wonderfully surprizing Genius made such Discoveries, by the Help of geometrical Reasonings on Matters of Fact, as must be an eternal Monument of Honour to his Memory; and if People would only give themselves Liberty to think, and not be carried away by outward Appearances, I question not but in a short Time we should discover something as remarkable in our Little World, as that illustrious Author has done in the Great.

I have purposely omitted a separate and distinct Discourse upon the Anatomy of a Horse, that being done to my Hand so well by Mr. Snape *and Mr.* Gibson; *therefore I have only taken Occasion now and then to speak something of Comparative Anatomy, when I am treating of the Diseases of the Liver, Lungs, &c. which will easily lead any judicious Reader (as near as possible) into what we term the* Ætiology *of Distempers.*

I must likewise inform the Reader, that I had the Offer of numberless Receipts (as they are termed) from several Gentlemen, that I might insert them in this Book; but I have not in the least made use of any of them, seeing he who has his Head full of Receipts, has his Head full of Nonsense, by reason there is not any such Thing as practising by Receipts, and a Number of them only serve to perplex and confound the Reader; therefore I have not err'd in this Particular, altho' I hope I have set down what is necessary for the Cure of each Distemper in Horses.

As to any farther Particulars, I must refer to the following Discourse, and shall only here take Notice in general, that as all possible Brevity has been studied on the one Hand, so I have not omitted any Thing necessary to be known by those who desire to lend a helping Hand in the Cure of Diseases

eases in Horses, which I myself, sometime through Charity, sometime through Curiosity, have often done, for the Benefit of these dumb, but serviceable Creatures, which are not below the Study of the most able Head.



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THE

THE ART OF FARRIERY IMPROVED.

CHAP. I.

Of the Signs of Sickneſs in Horſes.

I HAVE formerly (in my Preface to the Notes upon Captain *Burdon*'s *Pocket Farrier*) hinted, that it is a very difficult Matter to come at the true Knowledge of Diſtempers in Horſes, and that more Skill and Judgment is required in the Cure of them, than in thoſe of a Human Body; becauſe the poor Creature cannot anſwer any Queſtions, therefore we muſt have recourſe to the Motions of his Head, Geſtures of his Body, &c. Monſieur *Solleyſell*, a *French* Author, has treated very largely as to the laſt Particular; but his prolix manner of Writing, as well as that of ſome others of the ſame Stamp, has been a means to bewilder and confound moſt of our common *Farriers*, who (I am ſorry to ſay it) are generally an ignorant Set of *empty Coxcombs*, whoſe Diſcourſe about Diſtempers would make a knowing Perſon ſick to hear it:

And were it not for beneficent Nature, whose Power happens to be too strong and working for the Recovery of the sick Creature, in opposition to the Farrier's Prescription, I say, was it not for this, they would most (if not all of them) be cashier'd Gentlemens Stables. But it is in this Science, as well as in all other Branches of Physic, *viz.* that a Person shall have the Name of performing a Cure, when Nature has been the principal, if not the only, Agent in it; and no doubt many times would (with proper Diet, Exercise, *&c.*) restore Health sooner, was it not for a long Tribe of ill contrived Medicines, or rather Hotchpotches, forced into a Horse's Stomach, in small Spaces of Time, which obstruct her in her Operations. But before I proceed to a Definition of Sickness, I think proper first to define what is meant by *Health*.

Health defined.

Health then is justly defined the Faculty of performing all the Actions proper, (in any Creature as well as a human Body) in the most perfect Manner: And all the Effects of these Actions are such, as regard certain determined Motions, or the Change and Alteration of what is received into the Body; and on the contrary.

Sickness defined.

Sickness or *Disease*, is an unusual Circulation of Blood, or the circular Motion of Blood augmented, or diminished, either throughout the whole Body, or some Part of it; and this is what has been a generally receiv'd *Axiom* ever since the Circulation of the Blood was known, and Mathematicks and Natural Philosophy have been introduced into the Practice of Physick.

Most of our ancient Authors who have writ upon the *Art of Farriery*, have puzzled the World with their Accounts of Horses Complexions, (as they idly term it,) and from these Complexions they imagine a great many Diseases proceed. Others again, lay the greatest Stress upon the *four Elements*, which the Chymists confine to *Fire*, *Air*, *Water*,

Water and *Earth*, and then proceed to give an Account of the *four Humours*, which they will have to be *Blood*, *Phlegm*, *Choler* and *Melancholy*; then they go on with their *Temperaments*, such as *Hot*, and *Dry*, *Cold* and *Moist*, as this or that Humour is predominant; and some of them, particularly *Markham*, has refined so far on this Head, as to pretend to tell by the Colour of a Horse, which of the Elements has the Ascendant in him.

Indeed I cannot say but there is something in the Colour of a Horse which may denote his being hardy and able to endure all Weathers, or otherwise of a washy Constitution; but I am far from thinking, that there is so much in the Colour as *Markham* imagines; I shall therefore deviate from the common Paths of these *Rosicrusian Sages*, (whose Brains were much more full of Humours than most Horses Bodies with which they had any thing to do,) and inculcate a Practice founded upon right Reason and Experience.

I take a Horse, of the best Sort, to be one neither too fiery nor sluggish; for if he be of the first Disposition, he's subject to Fevers and Asthma's, which last is what the Farriers call a Broken Wind; and if he's of a dull, sluggish Temper, he's more subject to the Grease and Scratches, with all the foul Concomitants of a slow and languid Blood; such as the Farcin, distempered Eyes, Poll-Evil, all Eruptions or Breakings out upon his Body, with several other Disorders, which I shall touch upon in the Sequel of this Discourse.

Broken Wind.

Grease, &c.

As to the six *Non-naturals*, or *Res non naturales* as they are called by the *Latins*, I shall not trouble the Reader with a Discourse upon them, seeing I think the same would not profit much. Therefore, I shall content myself with the bare mention of them, and make use of the Term as often as I shall find occasion; though, I hope, with greater Perspicuity and Plainness than many who have writ, upon this Subject, before me.

The Six Non-naturals.

First then, a particular Regard muſt be had to the Symptom moſt urgent, or in plainer Terms, to the moſt dangerous Sign or Token of the Diſtemper: As for Example, If a Horſe be ſeized with a *Hæmorrhage*, or violent Bleeding, from a Wound or otherwiſe, the main Buſineſs is to ſtop it, and afterwards to conſider of proper Medicine to remove the Cauſe; in like manner, if a Horſe, or (as is moſt frequent) a Colt be in the *Strangles*, *Bleeding*, *Glyſters*, *Sweating*, and other *Evacuations* are immediately required, ſetting aſide all other Conſiderations of Sickneſs.

Secondly, If there be ſeveral Diſeaſes at one and the ſame Time, regard muſt be had to them jointly; only take this along with you, *viz.* that *the moſt dangerous Enemy is firſt to be encountered.*

Thirdly, If the Indication or Sign of a Diſeaſe be taken from the Blood, it is to be conſidered, that all Diſorders thereof depend on the circulatory Motion being increaſed or diminiſhed; and that all the Changes in the Texture and Quality of the Blood (as alſo in it's Quantity) are attended with either a Diminution, or Increaſe of the Blood's Velocity: Therefore, if the Quantity is too much augmented, Bleeding and other Evacuations are neceſſary; but if its Quantity is diminiſhed, then Reſtoratives, Reſt, and nouriſhing Food may be required: And if this laſt proceed from any Error in the Stomach, cauſing Loſs of Appetite, *&c* then thoſe things which create Hunger and help *Digeſtion* are to be adminiſtered; and if the *Craſis* or Texture of the Blood be changed, (as is uſual in long continued Sickneſſes) then it may be neceſſary (having due regard to other Intentions) to preſcribe ſuch Things as may correct the vitiated Maſs.

Bleeding when neceſſary.

Fourthly, When the Diſtemper proceeds from an Increaſe or Diminution of ſome Secretion or Diſcharge, the Cure (for the moſt part) conſiſts *in enlarging the Secretions*, which are too ſparing, and reſtraining

reſtraining ſuch as are too liberal; and no doubt *the ſafeſt Method to reſtain any augmented Secretion, is by increaſing ſome other.* And this Practice, if rightly underſtood, would be of the greateſt Uſe and Beneſit to *Farriers*, as it is now a received Maxim in Phyſick.

I would be underſtood, when I ſpeak of an augmented Secretion, that ſuch Secretion or Diſcharge is a Diſeaſe, and not a Remedy; for very often a Secretion augmented proves a Cure of ſome Diſeaſe either already broke out, or lurking in the Body; and in ſuch Caſe all imaginable Care is required, leaſt we ſhould by ſtopping (or even checking) ſuch critical Diſcharges, bring on a Train of Evils far worſe than the preſent. Augmented Secretion, what.

It is impoſſible for me to teach (the greateſt Number of) my Readers, the Uſefulneſs of this *Theory*, by reaſon it requires long Study and Experience; however I ſhall give an Inſtance or two, and then proceed.

I ſay then, if a Horſe be *Lax*, or has a Scouring upon him, if ſuch Diſcharge proceed from a Diſorder of the Guts, only by a *Putrefaction* of the Excrements too long retained, in ſuch Caſe no Man in his Senſes will give Medicines which Aſtringe or Bind, but on the contrary exhibit ſomething which may ſlowly and ſafely promote this ſo neceſſary Diſcharge. But if the Cauſe of a Looſeneſs proceeds from an *obſtructed Tranſpiration*, or that Sweating, which we call *inſenſible Perſpiration*, being ſtopped then indeed ſuch Things as promote *Sweat* and *Urine* are moſt eligible. The like Method is to be obſerved in moſt other Secretions, as in *Sweat*, *Urine*, running at the Mouth and Noſe, which is often obſervable in Horſes in the decline of Sickneſs, and when the Diſtemper is going off. Perſpiration obſtructed, the Cauſe of Looſeneſs.

Fifthly, As in Man, ſo in Horſes, Nature (or at leaſt what we underſtand by that Name) is the beſt and ſureſt Guide, and therefore the *Farrier* ought diligently to follow her, becauſe whenever Nature the beſt Guide.

ſhe finds her ſelf oppreſſed, ſhe endeavours to diſlodge the Enemy, and to that end, tries all the neareſt and propereſt Means: And it is ſurpriſingly wonderful, what a Number of *Outlets* and *Drains*, *Nature* has finiſhed for the Preſervation of Health, or the Recovery of it when loſt; for ſuch, are moſt or all the *Glands* by which Secretion is performed. Furthermore, though Nature is diligently and carefully to be obſerved and aſſiſted in her due Operations; yet ſhe is not to be compelled, but muſt her ſelf be the *Beginner*, nay and ought to be very often the *Finiſher* of the Work alſo.

I think I have ſaid enough under theſe Heads, therefore I ſhall proceed to a Diſcovery of ſome Errors in the Methods uſually taken to prevent Diſeaſes in Horſes, with the propereſt Means to preſerve *Health*.

CHAP. II.

Diſcovering ſome Errors in the Methods uſually taken to prevent Diſeaſes in Horſes, with an Account of the moſt proper Means to preſerve Health.

Health only relative.

AND firſt, I ſay *Health*, in it's beſt Eſtate, is only *relative*: For it is impoſſible any Creature ſhould keep at the ſame Standard or *Mathematical Point* of Health, even a Moment of Time; therefore 'tis only Relative: Yet all Creatures may properly be ſaid to enjoy Health, when they *ſleep, eat, digeſt well, and move without Pain*; and all this depends upon a regular and uniform Motion of the Blood; and whatever contributes to that regular and uniform Motion, muſt be the Means to preſerve Health. But, on the other Hand, it muſt be allowed, that the ſame Means which are uſed in times of Sickneſs to reſtore the Blood to its regular Motion, muſt be prejudicial in a State of Health, by reaſon

reaſon ſuch Means muſt effect a Change in the *Animal Oeconomy*, more than neceſſary. Thus Bleeding and Purging, may be ſerviceable to prevent a Diſeaſe, provided a Horſe be *Plethorick* and full of Blood; or if he has no other Signs or Symptoms which denote ſuch Evacuations uſeful: But then it muſt be allowed, theſe are Diſeaſes actually begun, and if a Horſe has none of theſe Signs that require Evacuation, all the Effect Bleeding can have upon him, is the *Leſſening the Quantity*, which is too often the Caſe, and of pernicious Conſequence, by reaſon ſuch Evacuation gives the Blood a different Motion from what it before had in a *healthful State*.

Should any one pretend to inſiſt, that theſe Evacuations are made in order to bring a Horſe into a better and more healthful State, and thereby ſtrengthen his Body, and enable him the more to reſiſt Diſeaſes; I anſwer, that there is a certain State of Health which is natural and agreeable to every Horſe, and that it conſiſts in the beforementioned Requiſites, *viz. In a Life free from Pain or any ſenſible Imperfection.* And there is not the leaſt doubt (but as among Men) one Horſe may in Conſtitution differ from another, and enjoy a more perfect Degree of Health; which Difference is owing to their original Conformation, Structure or Make. And of this Part of Knowledge we are much more in the Dark with relation to Brute Creatures, for as much as their Complexions or Conſtitutions are not diſcoverable thro' their Skins; but theſe may eaſily be perceived in a human Body, and a very juſt *Prognoſtick* or Token formed with relation to their inward State of Health. For how common is it for us to ſay of a Child or young Perſon, he or ſhe is an Ill-thriven or puny Creature; but as I have juſt now hinted, this Judgment is not ſo eaſily made in Brutes, for Reaſons too plain to be objected againſt.

Horſes Complexions not diſcoverable thro' their Skins, but it is otherwiſe in Men.

Lastly, All that can be expected, from tampering with Horses that are in their best State, is little or no Alteration; more especially if a Horse has Youth and Strength to withstand the Shocks given to Nature by Physick ill administred; or if otherwise, it will certainly be an Alteration for the worse, by reason that a Horse (naturally of a strong Habit of Body) may thereby be brought into an habitual Weakness, and this becomes a Disease. So likewise may a weak Horse be made much weaker, (I mean a naturally weak and tender constitutioned Horse) by Male-Administration of, or Tampering with Physick, which Accidents very frequently happen by such unskilful Management, altho' they are generally attributed to some other Cause, as foreign to the Affair, as to say, that *Tenderden Steeple was the Cause of the Goodwin Sands.*

'Tampering with Physick bad and of ill Consequence.

The Cause of several Errors in the Practice of Farriers.

I fancy what has led Farriers into these Errors, is their confused Notion of the Blood and Humours; Though I must ingenuously confess, I never yet talked with any one of their Tribe that could distinguish between a *Vein* and an *Artery*, or a *Tendon* and *Nerve*, &c. Therefore, how can it be expected, such illiterate (but positively ignorant) Coxcombs, should perform any Thing extraordinary in the Cure of either inward or outward *Maladies*. For these *Adepts* would make us believe, that almost all *Diseases* proceed from corrupt Blood, and therefore imagine the same, like Pond, or Ditch Water, which gathers Mud, or Filth at certain Times, so that it should be often cleansed. And because the Blood of these Creatures (most of them being used to Toil and hard Labour) is for the most part of an unpleasant Aspect, they seldom or never take it away, but they declare him full of corrupt and bad Humours, not considering that this may be the most natural State his Blood could be in at this Time, and that the same may be cleansed or purified sooner than by Bleeding, although I own this *practice* does

A vulgar Error among Farriers.

not

not ſo well *quadrate* or ſquare with the outward Senſes of moſt People who judge by Appearances only.

In the next Place you are told that the Horſe wants Purging as well as Bleeding; for the Farriers (poor Souls) have not the leaſt Notion of alterative Medicines, whereas the greateſt Feats may (without any manner of diſpute) be performed by ſuch things in moſt obſtinate cronic Caſes which have puzzled even the tip-top Gentlemen of the Profeſſion.

There is another Thing which ſeems to have given Encouragement to the Practice of adminiſtring Medicines to Horſes which did not thrive well (as the Term goes,) *viz.* becauſe they have been obſerved to eat plentifully and not become fatter or in better liking, till ſuch time as Evacuations have been pretty largely and plentifully made: Indeed whenever any ſuch thing happens, there is then a Sign of a Diſeaſe proceeding from ſome Obſtructions in the *Meſentery* or *Net* (as it is called in other Creatures beſides Men,) or from ſome viſcid, tough, or ſlimy Humour or Matter lodged in the firſt Paſſages, (which are the Stomach and Guts) this indeed may hinder a ſufficient Quantity of Chyle (which is the white Juice of our digeſted Food) from entering into the Blood: But I don't mean ſuch, therefore would be underſtood only as to thoſe Horſes, which on full Examination and Experience, are found to enjoy as ſound and perfect a State of Health as they have ever been known of. Theſe are the Horſes which ſhould not be bled, purged, or have Cordial Drinks given, at ſuch Times as are preſcribed in Farriers Books: For what can be more ridiculouſly abſurd, than (as is the common Cuſtom) to bleed a whole *Troop* of *Dragoon Horſes* in a Morning, juſt before they are turn'd to Summer Graſs; ſurely they are not all in the ſame Diſtemper at one and the ſame Time, and which requires Bleeding; and this is performed by way of preventing Diſeaſes: But let ſuch, who warrant

the Practice, go on in the blind Road of Ignorance; for I suppose they will be averse to better Guides.

But least I should be thought too peremptory and positive upon this Head, or to deviate too far from the common received Rules about Bleeding, Purging, *&c.* I shall lay down some few Cases, wherein Bleeding, or other Evacuations may be made, even when there are no Indications to be taken from Sickness: But even these are discretionary, and to be practised with Caution and Judgment: For Instance, Bleeding may be of Service to young Horses which are pretty fat, or have undergone any hard Exercise, or after a Journey in a hot Season; because either the one or the other is apt to augment and increase the Blood's Motion in too great a Degree, which may (before it has acquired any ill Tendency) be thus remedied: But even this may not be necessary to Horses that are accustom'd to constant Exercise, as Hunting or the like, or those that travel mostly the Year about; such are *Stage-Coach-Horses, Post-Horses, &c. Secondly*, A Horse that has been much used to standing, and get but little Exercise, may have a Vein opened, especially if there be any Reason, to suspect his Blood growing Viscid, and stagnating for want of proper Airings; because, while he is thus kept, a Disease may insensibly, and by Degrees, be creeping upon him, while as yet no certain Indication can be taken from outward Signs. *Thirdly*, It may proper to bleed, provided a Horse has had the Misfortune to tumble into a Pit of Water or deep Ditch, and the more so, if he has continued there any considerable Time; for although he does not shew immediate Signs of Sickness, yet such Accidents are a sufficient Warrantry for Bleeding and Cordial Remedies; by reason the Astriction or Shutting up of the Pores, occasioned by the Coldness and Pressure of the Water, may cause either a Fever, or a violent Cough, which may very likely end in the Glanders, or some other as fatal Distemper.

The

The ſame Caution ſhould be obſerved, as to adminiſtring purging Medicines to a Horſe, which ought never to be done barely at a Venture, but when the Farrier, or Owner, may have a ſtrong Suſpicion of a latent or hidden Diſtemper, which as yet is not diſcernable; and this may be thought neceſſary when a Horſe has eaten unwholſome Food, or drunk bad Waters, which he has not been accuſtomed to; whether it proceed from Careleſſneſs, or want of better Nouriſhment. I ſay, in theſe, or ſuch like Caſes, Bleeding or Purging may be uſed by way of Prevention. And I the rather ſo far give into theſe Methods, (with reſpect to Brute Creatures) becauſe ſeveral of their Diſeaſes may actually have a footing, before they can well be diſcerned, and becauſe they do not immediately ſhew us any Signs or Complaints of Sickneſs.

Yet, notwithſtanding all I have ſaid, the Practice of giving Medicines at Random is not juſtifiable, by reaſon it oftner proves prejudicial than any way contributing to the Horſe's Safety. And I therefore affirm, that *unneceſſary Evacuations of any kind, cannot be the way to prevent Diſeaſes, but that due Feeding and proper Exerciſe, are the only ſafe Means, and will ſooner bring a Horſe into good riding Order, than repeated Doſes of Phyſick, when there is no apparent Neceſſity for it.*

All Evacuations or Diſcharges effectuated by Medicines, leſſen the Quantity of the Blood, but moſt immediately Blood-letting: And if this has been frequently repeated, or Blood taken away at once in a large Quantity, the remaining part becomes languid in its Motion; Foraſmuch as a leſſer Quantity of Spirits muſt of conſequence be derived or ſeparated from a leſſer Quantity of Blood; therefore it has not Force enough to reach the Paſſages of the Skin and *miliary Glands*, ſo as to make the proper Secretions there; and from hence it may be obſerved,

obſerved, that *inſtead of preventing Diſeaſes, it becomes the Parent of many.*

Purging does much the ſame as Bleeding, though after a different Manner, and may indeed be of much worſe conſequence to Horſes, ſeeing all ſuch Evacuations act more directly againſt Nature, even to ſuch a Degree, that the whole animal Frame is put into great Hurry and Diſcompoſure by the Exhibition of purging Medicines; for there is a wide and very different Operation of Purges given to a Horſe from that in a human Body, which the leaſt Diſcernment may diſcover: For Example, a Man is in an upright Poſture, which helps to forward ſuch Diſcharges; but this Creature, being in a prone and horizontal One, the Medicine, by ſuch Means, lies longer in his Stomach and Guts, and twitches and vellicates their tender Membranes in a much greater Degree; neither can you force or oblige him to drink warm Water, if he be not of himſelf inclinable thereto. The beſt Method, in my Opinion, to prevent Diſeaſes, is, in the firſt Place, not to give a Horſe any kind of Food which may be thought unwholeſome, and let them drink Rain or River Water, which is clear and not troubled. I ſay theſe, along with proper Exerciſe, muſt conduce more to the Preſervation of Health, than all or any the differently preſcribed purging Phyſick too commonly made Uſe of without Reaſon.

Exerciſe, no doubt, is eſſentially neceſſary for preſerving Health in any kind of Animal, but more eſpecially a Horſe, whoſe very Nature requires Abundance of it, (if he has his full Feeding;) for, by Exerciſe the Blood is not only forced thro' the ſmalleſt Veins and Arteries by the ſeveral Contractions of the Muſcles; but all the little Glands and Strainers of the Body are thereby forced to throw out and diſcharge their ſeveral Contents, which certainly muſt be a great, if not the greateſt Means to preſerve Health. And this

Preſervation

Preſervation ought to be continued in Proportion to a Horſe's Strength and Manner of Feeding; for one of theſe Creatures, of a delicate and tender Make or Conſtitution, cannot bear much Exerciſe, nor ſhould ſuch a Horſe's Airings be vio'ent but gentle, and by this Management he may perform Work enough for moſt Men's occaſions, though I muſt own he would not ſuit my *Taſte* or *Buſineſs*.

CHAP. III.

Contains ſome general Rules to be obſerved in Bleeding and Purging Horſes.

I Have, in the foregoing Chapter, taken Notice of ſome Errors committed in Bleeding, and Purging, therefore I ſhall, in this, lay down ſome general Rules to be obſerved in theſe Operations.

And firſt, I ſay, Bleeding is the moſt ready, as well as the moſt uſeful Operation, for relieving any Creature in Sickneſs, or Diſeaſed, that can poſſibly be performed: For by this the moſt immediate Relief is obtained, ſeeing that by it the fierce *Æſtus* or Heat of the Blood, together with its Velocity, is reſtrained and abated; and not only the Heat and Velocity, but likewiſe its Viſcidity or Clammyneſs, may (in ſome meaſure) be deſtroyed. Therefore in all Caſes, where the Blood is too much agitated and in Motion, or where it is thick and fizey; I ſay, in theſe and ſuch like Caſes, this Operation is of Service. But I ſhall lay down ſome particular Directions which more eſpecially require Bleeding, and, in doing this, I ſhall not tie People down to particular Times or Seaſons, or the Influences of the Planets, though indeed the old phyſical Writers put great Stre.s upon the laſt of theſe, notwithſtanding they were ignorant of natural Philoſophy,

phy, a Science ſo eſſentially neceſſary in the Cure of Diſeaſes either in Human or Brute Creatures. I do not deny, but in ſeveral Caſes the *Planetary* Influences upon the *Fluids* of the Body are exceeding wonderful; and theſe Operations the learned Dr. *Mead* has fully explained, in his Treatiſe *de imperio Solis & Lunæ*: But this Gentleman's Way of ſplitting Hairs is too tedious a Task for me to venture on at preſent; neither would the ſame (in my Opinion) be either edifying or inſtructive to the greateſt Part of my Readers. Therefore I hope to purſue my firſt Rule and Deſign, which was to publiſh this Book with all the Perſpicuity and Plainneſs imaginable.

Bleeding to be avoided in extreme Cold or Hot Weather.

And *firſt*, Bleeding ought to be avoided (if it can with Safety) in all Extremities of Heat or Cold, and the Signs which require it are a *Plethora* or Overfulneſs of the Blood Veſſels, and this may be diſcovered by a Horſe's being purſive, when he is put to any Kind of Exerciſe, that is if he be not actually *Aſthmatick*, (or Broken winded as the Farrier's Term goes;) and even in this Caſe Bleeding wonderfully relieves a Horſe's Breathing, by leſſening the Quantity of that Fluid with which his Lungs are ſo inflated and blown up.

Secondly, Blood-letting is requiſite and neceſſary in almoſt all Fevers, whether Simple or Complicate, that is to ſay, whether the Fever conſiſts in an augmented Velocity or Quickneſs of the Blood's Motion, or when the Blood is (along with this increaſing Motion) vitiate or corrupt. But Care ſhould be taken to form a right Judgment of the Diſtemper: For, if it have its Origin from Want of Blood and Spirits, as is frequently the Caſe, after large *Hæmorrhages* or accidental Loſſes of Blood; or after long Scouring, or too plentiful Evacuations of whatſoever Kind; or when a Horſe has for ſome time been in a waſting or declining Condition; I ſay, in theſe Caſes (although ſome Indications or Signs may ſhew Bleeding proper) yet

yet it ought to be practiſed with the greateſt Caution and Circumſpection; and if Blood muſt be taken away, it ought only to be done ſparingly and in very ſmall Quantities.

Thirdly, I would have the Farrier always remember this General Rule, to wit, that *Bleeding is requiſite in all Impoſthumations or Gatherings of corrupt Matter in any Part of a Horſe's Body, and more eſpecially when ſuch Swellings are ſituate upon the Glands or Kernels of the Throat, or when they endanger Suffocation, or any other evil Accident:* But if the Farrier is conſulted too late, I mean if he is only called when the Horſe has been ill for ſeveral Days, and that there is a Tendency to Suppuration, or coming to a Head, as it is vulgarly called; I ſay in this caſe Bleeding is not to be uſed, becauſe by ſo doing we oppoſe Nature, who is at this time endeavouring to throw off the Enemy another way. But in Swellings of the Legs, occaſioned by the *Greaſe* (as it is called,) Bleeding may be ſerviceable, eſpecially if it be uſed in the Beginning of the Diſorder; for by this Help *Revulſion*, or a forcing the Humours to a contrary Part, is performed, and when this is effected, then it is neceſſary to purge the Horſe in order to carry ſuch Foulneſs off by the moſt proper Outlet: For, what ſignifies cauſing a *Revulſion*, unleſs you afterwards free the Horſe's Body of what's oppreſſive and burthonſome to Nature: For if the peccant Humour happens (by Bleeding) to be tranſlated from the Extremities, it is ten to one but ſome more noble Part is affected by it, unleſs ſpecial Care be taken to purge it off in the moſt judicious Manner.

Bleeding, proper in ſwelled Legs.

I have ſaid, that Bleeding is proper on Account of Swellings in the Legs, occaſioned by the *Greaſe*, provided it be uſed in the Beginning, and before they are too much inflamed, by reaſon this Diſtemper at firſt chiefly proceeds from a Stagnation or undue Circulation of the Blood in theſe extreme Parts, where the ſame loſes a great deal of its Force, by reaſon

reaſon of the Smallneſs of the Veſſels, and the Diſtance from the Heart. And I hope (in the Sequel of this Diſcourſe) plainly to make appear, that this undue Circulation is moſtly the Cauſe of the Greaſe, which is contrary to the Notions of former Writers, who imagined that in ſuch Caſes the Blood was full of Impurities and Corruption, as they idly term it.

Bleeding, proper in violent Pains.

Fourthly, Bleeding is requiſite in any violent Pains, inwardly or outwardly, or as the Phyſicians write, Internal or External, as Wounds or Bruiſes, and Pain and Inflammation of the *Lungs* or *Pleura*, which is the Noble and Senſible Membrane that covers all the Cavity of the *Thorax*, or Cheſt in Horſes; or in Inflammations of the Liver, when they can be diſcovered; and I ſhall do my beſt to inform the Reader, how he may diſtinguiſh each of theſe kinds of Inflammations, when I come to treat of the Diſtempers of the Breaſt. Though, notwithſtanding what ſome Gentlemen have writ about Pains in the *Stomach*, *Lungs*, *Liver*, *Pancreas* or Sweet-Bread and the like, I muſt own it a very difficult Task to diſcover the Seat of internal Pains in Horſes.

Fifthly, Bleeding is proper, in moſt, if not all, Diſorders of the Head, ſuch as *Vertigo's*, commonly called the Staggers in Horſes; and in the firſt Stage or Beginning of Colds, by which Deſtructions of Rheum are apt to fall upon the Lungs and oftentimes the Eyes. Several former Authors forbid Bleeding in the Diſeaſes of the Eyes, particularly the *Sieur de Solleyſell*, who no doubt has made the Remark from his having ſeen ſome ill Effects of it in ſuch Diſtempers: But the Queſtion is, whether this Gentleman formed a right Judgment of particular Caſes, and duly weighed and conſidered all the Symptoms together? For if a Horſe be Lean and out of Order, that is, when the State of the Blood is very low and poor, and the Heart ſcarce able to drive it round the Horſe's Body, why, then indeed

it

it is moſt likely to ſtagnate or ſtop in the Extremities and ſmall Capillary or Hair-like Blood Veſſels; becauſe the ſucceeding Fluid is deſtitute of force to impel or drive forward the antecedent Part of the Blood: And this no doubt is true Doctrine, ſince by taking Blood away, we take away from its Force or *Momentum*, which in the Caſe deſcribed is already too ſmall, and therefore Bleeding may ſometimes (as *Solleyſell* has obſerved) occaſion Diſorders of the Eyes, if not abſolute and total Blindneſs. But then in all Overfulneſs of the Veſſels, from hard-riding, or from whatever Cauſe, which drives the Blood into the Extremities faſter then it can be returned by the ſmall Capillary Veſſels, or if the State of the Blood be too viſcid and clammy, by which Means it loiters in the ſmall Veſſels of the Eye-lids or Body of the Eyes, Bleeding muſt then be of Service, and from the ſame Theory it may be proper in the *Farcin*, and other Diſeaſes of the *Skin*.

Laſtly, The Horſe's Age ſhould be conſidered: For a young Horſe, though he be more ſubject to Diſeaſes than an old hardened Stager, yet he will ſooner recover the Loſs of his Blood: And in my Opinion, a Horſe in the Prime of his Years, will of all Ages withſtand ſuch Evacuation beſt: But as to regulating when and at what Age a Horſe may be ſaid to be in his Prime, it is very uncertain, and muſt only be learned from ſuch and ſuch Breeds of Horſes; for, there is (to my own Knowledge) as much Difference in this Particular with relation to the Prime of Age in Horſes, as there is in Man, and there are as long-liv'd, ſtout and hardy Generations (comparatively ſpeaking) amongſt theſe Creatures, as amongſt Mankind; and on the contrary, ſome are old whilſt they are yet young, if I may be allowed the Expreſſion.

The Reaſon why a Horſe is not ſubject to Sickneſs and Faintings during the Operation of Bleeding, is becauſe of his prone and *Horizontal* Poſture, which

The Reaſon why a Horſe is not Sick in Bleeding.

which does not require so strong a *Systole* or Contraction of the Heart, in order to throw the Blood round the Body, as it would if in a perpendicular Situation. This is plain to any one who has the least Notion of *Mechanicks*; and for the same Reason a Man will lose twice the Quantity of Blood lying upon a Bed or Couch, without being sick, than he can in an upright Posture; which Truth was well known to our famous *Sydenham*, although this great and faithful Observer was very much wanting in *Mathematical* and *Mechanical* Knowledge, so that he could not share the real Pleasures of those who have a *Why for a Wherefore.*

I shall now proceed to shew in what Cases Purging may be necessary, and then give an Account of those *Fevers* in general which infest this poor useful Animal.

Purging, how brought about.

Purging, I say then, is brought about by such Medicines, which by their Irritation provoke and stimulate the Membranes of the Stomach and Guts, whereby the *Peristaltic* or *vermicular* Motion of the latter is quickened, so as to shake or throw off their Contents: But if the Dose happens to be too large, or abounds much with *Resinous* Particles, which of all are most pricking and stimulating, or (to speak after the common Way) if very strong Physick be given, it not only carries off what is contained in the Stomach and Guts, but likewise causes such reiterated and frequent Twitches, as derive a more than ordinary Quantity of Blood and Spirits into those Parts, whence is separated and discharged Abundance of the *Serum* or watery Part of the Blood, by the common Passages. And from hence it is evident, that a Medicine may be so contrived, as to carry off more or less of the Substance of the Blood, according as the Dose is increased or diminished, or as it abounds more or less with purging Particles, and consequently may be rendered profitable or hurtful.

It

It is needleſs to detain the Reader with the Manner of preparing the Body for this Operation; neither ſhall I lay down Rules for rendering this or that Sort of *Humour* fit for Diſcharge by Medicines, which have with much Induſtry and more Ignorance, been deviſed to prepare *Choler*, *Phelgm*, *Melancholy*, and the like whimſical imagined *Humours*; that Sort of Practice being now juſtly exploded as ridiculous and uncertain; ſince it is plain, that all Kinds of purging Medicines differ only in Degrees of Strength, and operate no otherwiſe upon different Humous, than as they ſtimulate more or leſs, and either work no farther than the *Primæ Viæ*, or firſt Paſſages, or elſe cauſe a Diſcharge from the Parts more remote from their Scene of Action, which principally lies in the Stomach and Guts. And what particular Regard is to be had to the different Kinds of purging Medicines will, I hope, be ſufficiently ſhewn to the Reader's Satisfaction in the Sequel of this Treatiſe, when I come to treat of Diſtempers which may demand Purging. And therefore at preſent, I ſhall only lay down ſome general Directions, which may be of uſe to all thoſe *Gentlemen* who keep valuable Horſes. And,

Firſt, I ſay, Purging is neceſſary in moſt or all *Plethorick* Caſes, when there is a Redundancy of Blood, but the Horſe ſhould firſt of all be bled to render his Body cool and lightſome: For, if he be purged when his Body is full, it may, (unleſs the other Secretions are free) I mean the Diſcharges by Urine, *&c.* occaſion (during the Operation) a too great Hurry in the Motion of the Blood, or by driving or forcing off too great a Quantity of Blood, *&c.* into the Inteſtines or Guts, an Inflammation may enſue. And for this Reaſon it is judged proper that thoſe Horſes, which are *Plethorick* or full of Blood, ſhould only have mild and eaſy working Purges given them.

Secondly,

Purging proper in Diſorders of the Stomach, and foulneſs of the Guts.

Secondly, Purging may be allowable in Diſorders of the Stomach before other Things are adminiſtred, and that, becauſe a Horſe can ſeldom or perhaps never diſgorge himſelf by Vomit.

Thirdly, It is proper in all Foulneſs of the Guts, for driving out all viſcid and ſlimy Matter, and particularly when a Horſe is troubled with Worms, provided the Purge conſiſts of ſuch Ingredients, as I ſhall hereafter mention, when I come to treat of this common though troubleſome *Reptile*, which afflicts moſt Horſes ſooner or later. And furthermore, Purging may be neceſſary in Coſtiveneſs, and in ſeveral kinds of *Diarhœa's* or Looſeneſſes of the Belly; but theſe likewiſe muſt conſiſt of well adapted Ingredients, *viz.* ſuch as after Purging in a gentle and eaſy Manner, conſtringe or leave a binding Quality behind them, ſo as to ſhut up, in ſome Sort, the excretory Ducts of the inteſtinal Glands: Yet great Care muſt be taken in this Matter, leſt by improper Purges, the Glands ſhould be ſo relaxed as to bring on an Inflammation of the Guts, by the too violent Operation of the Medicine.

Fourthly, and *Laſtly*; I recommend Purging as uſeful in groſs Habits, where there is any Tendency to ſwelling of the Limbs, or any other Part of the Body; in humid and watry Diſeaſes; in Diſorders of the Liver, cauſing the Jaundice (or Yellows in Horſes;) in Diſeaſes of the Eyes and Head, where there is not any Fever, but only a Stagnation of the Blood, in ſome of the ſmall Capillary or Hair like Veſſels; for Purging, in ſuch Caſes, not only drains off Part of the ſuperabundant Matter, but alſo (by putting the Blood in a briſker Motion.) cauſes a Separation of its groſſer Parts; ſo that it moves with more Eaſe and Freedom through all its *Canals*, and by this Means is brought more readily to the ſecretory Offices, or particular Outlets, deſigned by *Nature* to throw off the excrementitious Parts of Nouriſhment.

I muſt

I muſt not, however, cloſe this Chapter, without acquainting the Reader, that in Bleeding and Purging a particular Regard muſt be had to the Strength of every Horſe; by Reaſon (in the laſt Caſe) the Irritation, or pricking and convulſive Twitching, which many Kinds of Purges occaſion, (during their Operation,) brings on *great Sickneſs, convulſive Motions of the Body, damp Sweats*, &c. *which too often end in Death.*

In Bleeding and Purging, the Strength of a Horſe to be conſidered.

A Horſe is with much more Difficulty purged than a Man, becauſe of their prone or horizontal Poſture, which helps nothing towards forwarding the Medicine; therefore the Phyſick lies moſtly twenty-four Hours in his Guts, before it operates. And, for the moſt Part, the Purges given to Horſes conſiſt of ſuch Things as are of a reſinous Quality, and theſe, of all other, are moſt ſubject to cauſe violent Gripings, cold Sweats, *&c.* for, as they are ordered moſtly without any Mixture to qualify his Property, it is much, ſo many Horſes get through their Phyſick every Spring: And I rather attribute it to the Strength of the Horſe's Conſtitution, than to any good Judgment in the Farriers, or common Keepers of galloping Horſes. For there is no Doubt, in the leaſt, but the ſame general Rule will hold good in purging Horſes, as it does in Men; I mean, the *Idioſyncracy* of Bodies is to be firſt (as much as may be) ſtudied amongſt theſe Creatures: And this Knowledge of the peculiar Temperament or Diſpoſition of this or that Horſe, with relation to his being eaſily or difficultly wrought upon by any Kind of Medicines, I am convinced, be the greateſt Guide a Farrier can follow. And this Diſpoſition may, in ſome Meaſure, be learned from the Horſe's Conſtiture, or Make, the firmneſs of his Fleſh, *&c.* thoſe Horſes which are kept at hard Meat a long time together, and get pretty well of Exerciſe along with it, are (it is very well known) moſt difficultly purged, by Reaſon they have fewer Juices,

Conſider the Idioſyncracy of Bodies.

to

to work upon, than a groſs fat Horſe, who has little or no Exerciſe.

I have given theſe looſe Hints about Bleeding and Purging, before I enter upon a Diſcourſe of the Diſtempers incident to Horſes, as the ſame was neceſſary to be conſidered by all Farriers, and is, or ought to be, one of the Fundamentals of their Practice; I mean this, *viz.* that every Farrier ſhould rightly and duly weigh each and every Symptom or Token of Sickneſs in a Horſe, and conſider well, whether he requires Bleeding, or Purging, or both; and not (as is too common,) ſtrike his Fleams into his Neck, or toſs a Purge into his Stomach, *hab nab* at random, which may very likely go near to kill him, when performed without due Caution. But what relates to this and all other Operations, both manual and other, will, I hope, be fully and clearly laid down in the Sequel of this Book, to the Farrier's Satisfaction, as well as of all Gentlemen, who admire good Horſes. And I ſhall do my utmoſt, to apply all general Rules as juſtly and methodically as poſſible.

CHAP. IV.

Of the Strangles.

AS this is, for the moſt Part, one of the firſt Diſtempers that young Colts are ſubject to, I judge it proper to be firſt treated of; after which I ſhall enumerate the different Kinds of Fevers, to which Horſes are liable. And

Firſt. I ſay, the Strangles is a Swelling under the Throat between the Jaw-Bones, and ſeems not to differ (in any great Degree) from what we term the Quinſy in human Bodies; though its ſaid that the Seat of the Strangles is not ſo much upon the Glands as upon the Muſcles, and therefore proceeds ſooner to Impoſthumation, or Gathering

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(as it is called); neither is it thought there is so much Danger in the Strangles in Horses, as in a Quinsy in human Bodies, by reason the Muscles of the *Larynx*, or Wind-Pipe, are not so much afflicted in the first, as in Man: For in Horses, the Muscles of the Tongue seem only to be touched with the Distemper, and therefore it is, that the Matter comes naturally to have an external *Discharge*.

I have said, that young Colts are most subject to the Strangles; and, as I remember, Monsieur *Solleysell*, the *French* Farrier, compares this Distemper in Colts to the Small-Pox in Children, and he has taken Notice, that few Horses are troubled with it above once in their Life, unless the Matter of the Strangles has been imperfectly cast off, and that then indeed, it generally returns at six, ten, or twelve Years of Age. This Author farther observes, that the *Morbific* or offending Matter is sometimes cast off by the Limbs, and other Parts of the Body, and more especially by those Members that have been any way hurt or weakened; for the Humour or Matter of the Disease, by Translation, soonest affects the weakest Parts. The Strangles compared to the Small-Pox.

The last Author mentioned, was very meanly skilled in the Anatomical Structure or Make of a Horse, although he was a very diligent Observer of all manner of Accidents to which that Creature is liable: If therefore he had been better acquainted with Anatomy, his Accounts might have been edifying as well as more instructive to his Readers. For although this Distemper of the Strangles be near allied to an external Quinsy, as to its Situation, and also in many other Respects; yet, no doubt, as it mostly happens to Colts, it may (not without Reason) bear an Affinity to the Small-Pox: For, as the Blood of young Horses may reasonably be supposed equally Fluid, having not as yet been sufficiently comminuted, or divided by frequent Circulations, therefore, while they are in this imperfect

fect State, they are rendered more liable to Diſeaſes; and when theſe happen, they fuſe and melt the Blood, or purify it from its Viſcidities or groſſer Parts, by ſome proper Out lets or Diſcharges, which are anſwerable to thoſe by which the Small-Pox are thrown out and diſcharged in human Bodies. But as the Small-Pox breaks out in little Puſtules, or Bladders full of Matter all over the Skin, whereſoever the Veſſels are ſmalleſt, and where the Blood is moſt apt to ſtagnate or ſtop; yet becauſe the Blood-Veſſels in Horſes are conſiderably ſtronger and thicker than in our Bodies, therefore theſe Impurities cannot be ſo readily diſcharged in the Manner aforeſaid, but break out in Boils and Swellings in in the Neck, &c. And I hope this Account may ſatisfy every impartial Reader, why Colts are moſt ſubject to the Strangles, and other Impoſtumations than thoſe Horſes which are arrived at a more mature State.

I would be underſtood under this Head that moſt Colts (though not all) have the Strangles before they arrive at ſix Years of Age; yet, I will not ſay but the Diſtemper may be ſooner or later brought on by Colds, or other Miſmanagement in keeping: And I muſt own, that although I have bred ſeveral Colts myſelf, yet not one, to my Remembrance ever had the Strangles; and this I attributed moſtly to their being kept warm in Winter with good Meat, &c. And though this *Theory*, ſeems to contradict what I juſt now advanced, *viz.* that the Diſtemper called the Strangles ſeems implanted in the very Nature of Horſes, yet I imagine the Seeds of it do not always meet with a proper *Nidus*, ſo as to propagate the Strangles, till ſuch Time as the young Horſe has contracted (what we call) Colds, or, in better *Engliſh*, till ſuch Time as by the Conſtipation, or ſhutting up of the Pores by the Violentneſs of the Seaſons, inſomuch that the requiſite Perſpiration is impeded, and proper Ferment produced, which brings forth the Diſtem-

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per mentioned. And this is not a very ill grounded Hypotheſis, if it be conſidered, (as is really the Caſe with ſeveral kinds of Seeds) how they will lie in the Earth Scores of Years together, without producing any ſuch Thing as a Crop till ſuch Time as the Ground be dug up and huſbanded, and then indeed you ſhall have Turneps, Muſtard-Seed, and ſuch like, without ſowing one Grain; nay, altho' the ſame Ground has not been turned over for a Hundred Years before. And of this Fact I have been an Eye-Witneſs, (ſo far as my own Memory could inform me;) and it is well known in the Field-Country of *Lancaſhire*, that ſo ſure as any Perſon throws up a new Ditch, ſo ſure he will reap a fine Crop of Muſtard Seed, without ſtrewing any upon the Ground before hand.

Mr. *Ray*, in his Natural Hiſtory of Plants, has ſaid enough to convince any unprejudiced Perſon of the aforeſaid Truth; and I have dwelt the longer upon this Matter, by reaſon of the great *Analogy* there is between *Plants* and *Animals*, with relation to a great many inward as well as outward Diſtempers: And this, if my Time would permit, I could with great Reaſon make appear. But I muſt proceed to my Subject-matter.

I ſay then, ſo ſoon as it is perceived that a Colt (or it may be a Horſe of riper Years) has the Symptoms or Signs of the Strangles upon him, and that the ſame has a Tendency between the Jaws, as is moſt common, from the dependant Situation of the Head,) and that the Paſſages of the Gullet and Wind-Pipe are not endangered, the ſafeſt Way is to ripen the Swelling, and bring it to ſuppurate, or burſt, by warm Cloathing, and Applications which ſoften the inflamed Parts. For Example; the following excellent Poultice is proper to bring the offending Matter outward, and thereby prevent Suffocation, or other evil Accidents attending the *Larynx* and *Pharynx*, or Muſcles of the Wind-Pipe and Gullet.

An excellent Poultice for the Strangles.

Take of Leaves of Mallows, and Marſh-Mallows (either green or dry,) each ten Handfuls; white Lilly-Root, half a Pound. Boil theſe very ſoft in Water, and preſs them out ſtrongly; then take Lin Seed, and Fenugreek-Seed, each four Ounces; bruiſe them, and boil 'em in two Quarts of Water ſlowly, till it become of a mucilaginous Conſiſtence; after which, ſtir and beat it up well with the Leaves and Roots; then add four Ounces of Ointment of Marſh-Mallows, and one Pound of rendered Hogs-lard; mix well, and keep for Uſe.

This is a moſt incomparable *Cataplaſm* or Poultice, in ſeveral Caſes beſides what I have mentioned, when Nature is, as it were, deſponding, and cannot throw off the Load of Matter which cauſes the Diſtemper or Swelling, ſeeing that by its genial Warmth (for it ought to be applied pretty warm) it comforts the ſtretched *Fibrillæ* or animal Threads, which are diſtended beyond their natural *Tone* or Dimenſions by the Influx of the offending Matter, and alſo greatly contributes to thin the Skin, by its mollifying and ſoftening Quality. So that theſe two principal and great Ends are anſwered by the Application of the aforeſaid Poultice, *viz.* bringing Relief to the diſtended Fibres, and alſo thinning the Skin and muſcular Fleſh; inſomuch that the fluctuating Matter may with more Eaſe be felt by the Finger, than it otherwiſe would be. In fine, I cannot ſay too much in Praiſe of this *Cataplaſm*, whoſe Virtues are ſo unparallelled by any other I could ever contrive; (I mean in relation to tumefied or ſwelled Glands in any Part of the Body;) and I have known it uſed by my Direction, to Horſes in the Strangles, which have received great Benefit from it. The Manner of applying it is upon a double Cloth, very thick, and pretty warm, always adding a freſh Poultice as the old grows dry.

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If the *Tumour* breaks, the Wound may be dreſſed with the Ointment under the Title of the *Farrier's Ointment*, ſpread warm on Tow, or ſuch like, and the *Poultice* over all: For you muſt remember to keep this going on till all the Glands are fallen, or come to their natural State and Bigneſs; otherwiſe, it may happen, as I have often obſerved, that for want of uſing the Poultice (or ſome ſuch Application) the Glands have been ſo indurated or hardened, that they would not yield to any Thing but Extirpation or Cutting out, and would turn out like a boiled Turnep or Potatoe, upon giving the Skin a croſs Inciſion or Cut, and pulling them out with one's Fingers. Or, for want of this Operation, the Horſe has been big and ſwelled about the Jaws during the whole Courſe of his Life.

I adviſe to lay all ſinuous or hollow Wounds or Ulcers open, as far as poſſible without Danger to the Blood-Veſſels, Nerves, or Tendons, and to make the Inciſion according to the Direction or Length of the Fibres, that is, you ought not to cut a-croſs the Muſcles, or Leaders, (as they are called by Farriers.)

The Dreſſings, after Inciſion, ſhould conſiſt of thoſe Things which are of a *deterſive* and *mundifying* Quality, ſuch as are all the kinds of Turpentine, which I ſhall have occaſion to ſpeak of in the following Pages. Theſe incorporated well with Honey, Yolks of Eggs, *&c.* as I ſhall deſcribe under the Name of the *black digeſtive Ointment*, along with the *Farrier's green Ointment*; and a few Mixtures, moſtly ſpirituous, I believe will be ſufficient for moſt or all Wounds, both recent and green, as well thoſe which, through bad Management and length of Time, are grown ſinuous or hollow, and therefore difficult of Cure. Proper Ointments for Wounds.

Of a contrary Quality to Turpentines are all kinds of *Oil*, *Hogs-lard*, *&c.* with all the Tribe of *unctuous*, *oily*, and *greaſy Applications*, ſuch as (for the moſt Part) Farriers are wont to apply to

Wounds: For theſe greaſy Applications are very pernicious, by reaſon they occaſion *fungous* or proud Fleſh, and likewiſe foul the Bones, Tendons, *&c.* where the Wounds are deep; therefore I would adviſe all Gentlemen to toſs ſuch Compoſitions out of their Stables, as detrimental. Indeed there is ſome Butter ordered in my *Farrier's Ointment*, but the Thing could not be made any way lower, or of an eaſier kind than the *black digeſtive Ointment*, without it; and beſides, *May-Butter*, when Cows are at Graſs, partakes of a fine mundifying or cleanſing Quality, far before Hogs-Lard, or ſuch like. And this I have many Times experienced to my Satisfaction.

Tents are alſo pernicious in moſt Caſes, for they occaſion the Fleſh to grow callous, or hard and horny; and this is what is meant by the Wounds growing Fiſtulous; and till this Calloſity or horny Part be deſtroyed by Kniſe, Fire, or corroſive Powders, there is no ſuch Thing as healing the Wound, and on this Account it will diſcharge a naſty, ſtinking, ſanious Matter, while the Horſe lives.

Mr. *Gibſon* (in his Book of Farriery) is very tedious and prolix in treating about the Cure of the Wound, when the Matter of the Strangles runs off; but he might have ſaid as much to the Purpoſe in a few Words, *viz. Keep the Horſe's Body, and eſpecially his Throat, warm, and dreſs the Wound with ſome good digeſtive and warming Ointment, and apply a ſoftening Poultice thick and warm over all, till ſuch Time as the Glands or Kernels are fallen, and the Humours diſperſed:* But this is not brought about but with great Care and Patience: For in all the Swellings, either in Human or Brute Creatures, none are ſo tedious and difficult of Reſolution (or being diſſolved) as Tumours or Swellings of the Glands, and this by Reaſon of the Coldneſs of their Nature (if I may be allowed the Expreſſion;) for the Blood, *&c.* or rather the Juices, make ſo ſlow a Circuit in the Glands,

Tumours of the Glands hard to be diſſolved.

Glands, in Compariſon to what it does through the other, (moſtly rectilinear) Canals of our Bodies, that theſe Swellings, from want of Heat, (which Philoſophers know conſiſts in Motion) are of ſlow Procedure.

I have ſaid thus much in relation to the Strangles, which I hope may be ſufficient: For in this Chapter, as well as the following, I ſhall not trouble the Reader with long Accounts of Things which would rather puzzle and incumber his Memory, than any way tend to his Information. Therefore I now proceed to ſay ſomething of the *ſpurious or falſe and Baſtard Strangles*.

CHAP. V.

Of the Baſtard Strangles.

MOnſieur *Solleyſel*, as well as our own Countryman Mr. *Markham*, has accounted for the Baſtard Strangles in a very odd kind of Manner.

Theſe Authors imagine, that when the Matter of the Strangles is imperfectly carried off, that there remains a latent Ferment in the Blood, which in its proper Time will agitate the Humours, and cauſe them to fall upon the ſame Place where they ſhould have been before caſt off. And this, they ſay, may ſometimes happen five or ten Years afterward, when a Horſe is ten or fifteen Years old. Indeed at firſt Sight, and to moſt illiterate People, who have no other Notion of Things than as they quadrate or ſuit with the outward Senſes, this ſeems ſound Reaſoning; but it is all Bombaſt, nonſenſical Stuff: For it is well known there is no ſuch Thing as Fermentation in the Blood, nor in any other Fluid, which flows with the like Celerity; becauſe this Celerity manifeſtly hinders that Inteſtine Motion, ſo abſolutely neceſſary to produce Fermentation. But really, it is no eaſy Matter to fix Boun-

darie to this Term; for under it ſome are for reducing almoſt all that belongs to Phyſick, chiefly as it is a Term that account for, in the Lump, many *Phænomena*, and ſaves a great deal of Trouble, by ſaying ſuch an Effect is occaſioned by Fermentation. However, it ſo far concerns every Body to have ſome juſt Apprehenſion of what this Term ought to expreſs, that I cannot be at too much Pains to explain it. Inſomuch as it regards Medicine, and exalting or deſtroying any Properties therein, we cannot have a better Idea of it, than by underſtanding all which concerns the procuring a ſpirituous Liquor from Corn. Firſt then, in the Grain itſelf muſt lie the Materials of what makes the ſpirituous Part, becauſe nothing elſe (beſides Water) is concerned in it. To this Purpoſe therefore, it is ſoaked juſt ſo long, in a Ciſtern of Water, as is ſufficient to looſen or open its natural Texture; after which, it is thrown in a Heap, where it is ſuffered to lie till, by the Motion of its more fine and volatile Parts, it begins to heat and ſhoot out, as in Vegetation, or Growth in Plants. But to confine theſe Parts from flying off, by too long a Continuance of ſuch Inteſtine Motion, it is thrown abroad thinner, and expoſed more and more to the Air, till it contracts almoſt a Dryneſs, which is finiſhed by the Kiln, and all its Parts maintain'd together, but yet in ſo lax or looſe a Condition, as very eaſily to open and unite with warm or hot Water: For by the Sweetneſs and Conſiſtence of Wort, and Lightneſs of the Grains, it is plain, that the whole Subſtance of the Kernel is intimately mixed with the Liquor.

Fermentation explained.

After this Apparatus, to finiſh the Proceſs, and raiſe from it a ſtrong Spirit, the reſt is done by Fermentation with Yeaſt or Barm. But to explain how Fermentation is mechanically effected, and how it brings forth ſuch a Spirit, would take up too much Room in this Place; however, ſuch Effects

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are very conceivable, if the Reader has the leaſt Notion of *Hydroſtaticks*.

I could, under this Head, account for the different Changes Bodies undergo under a State of Corruption, which is one Species of Fermentation. But with all theſe Requiſites to this inteſtine Motion of Bodies, very little thereof can take place in circulating Liquors, ſuch as the Blood, *&c.* How much ſoever this Term therefore is made uſe to account for ſeveral Appearances in Animals, it muſt be from mere Ignorance, or on purpoſe to deceive. For thus far only can their Juices be capable of Fermentation, as they are remitted in their circulatory Motions enough to make the natural Attractions of their Particles greater, than the Force by which they are impelled or driven forward, which cannot be but where they are almoſt entirely ſtopped. And it is therefore in the larger Glands only, that the ſeparated Juices may undergo ſome Motions of this kind, ſo as ſometimes to be changed thereby from their natural Properties: But the Blood (while in its Circulation) cannot undergo ſuch Influence, becauſe the Velocity of its Parts, from the impelling Force, is too great to let them obey their Attractions of one another. How remote from Truth then muſt thoſe Reaſonings be which are built upon ſuch a Foundation, I mean ſuch as build their Faith upon imaginary Notions of the Blood's being in a Ferment, (as the common Expreſſion goes;) and how hazardous muſt a Practice be which flows from ſuch a Theory?

I have been more tedious with relation to the aforeſaid Term than ordinary, becauſe it will, I hope, ſave me farther Trouble in the Sequel of this Book, when I come to treat of Fevers, which (according to the common Notion) are occaſioned through a Fermentation in the Blood. Therefore I beg the Reader will excuſe the Prolixity: But to return.

When Swellings, like the Strangles, happen to old Horſes about their Jaws and among the Glands or Kernels of the Throat, it is an infallible Sign of a crazy Conſtitution, and often is a Forerunner of the Glanders, unleſs ſuch Swellings are occaſioned by ſome violent Colds, or hard Uſage. And really the ſame Diſpoſition may be obſerved in human Bodies; for if theſe happen to be of a tender and delicate Habit, or conſumptive, the glandulous Parts are often tumefied and ſwell'd, as well theſe in the Throat call'd by Anatomiſts the *Parotides*, as theſe in the Melentary or Cawl; and of this Truth I have been many time convinced in the Courſe of my Practice and Diſſection of Bodies.

Purging proper in groſs Habits.

Laſtly, in all Caſes where there is a groſs Habit, with a Tendency to Swellings in the Limbs, or any other particular Part of the Body, Purging may be neceſſary; as likewiſe in humid or watery Diſeaſes, ſuch as tend towards a Dropſy of the Belly, *&c.* in Diſorders of the Liver, cauſing the Jaundice, and in the manifold Diſtempers of the Eyes, but more eſpecially when they proceed from Rheum: For really, in dry Blindneſs, as it is called, I am ſure it cannot be of Service; and when I come to treat of the Diſeaſes of the Eye, I hope to do it in ſuch a Manner as that the World will be convinced of the Soundneſs of my Doctrine, which does not conſiſt in Hypotheſis, and Chimerical Notions, but is founded upon the ſtricteſt Anatomical Obſervation and Experience.

I ſay Purging is proper in the Diſeaſes above-mentioned, by reaſon of the Revulſion or calling back the Humours from thoſe Parts: It may likewiſe be proper in moſt Ailments of the Head, where there is not any Fever, but only a Stagnation or Stopping of the Circulation of the Blood in ſome of the ſmall Veſſels. For, Purging in ſuch Caſes puts the Blood into a more briſk and free Motion; not (as ſome pretend) by carrying off any offending Matter, for that is impoſſible, (as ſhall be

be ſhewn hereafter,) but by cauſing an uneaſy Senſation, and irritating the Glands of the Guts, and thereby obliging them to throw off their Contents both good and bad. This, I ſay, makes what we term Revulſion; as alſo better fits the Glands to perform their Office of Secretion, not only in the Meſentery, or Cawl, but quite through the whole Body (if the Purge be prepared as it ought) when a Horſe can bear purging. And I might, under this Head, plainly ſhew, how ridiculous it is for any Perſon to imagine that a Purge carries off this or that particular Humour, any more than that the Blood can be freed from the moſt offending Part of it by Phlebotomy, in every or any Caſe whatſoever. And, although, I am convinced that what I am now writing is in direct Oppoſition to the common received Opinion; yet I doubt not making it plain as the Sun at Noon-Day, *viz.* that Purging is only making Revulſion in a particular Manner, and that the Good it produces flows from a different Spring than what is commonly thought.

CHAP. VI.

Of Fevers.

Of Fevers.

MOST Authors, who have treated of *Fevers* in Horſes, have defined ſuch Diſeaſes under a preternatural Heat of the Blood: And the French Farrier, *Solleyſell*, has in particular compared "a "Fever to the Ebullition or working up of Wine "(for they have little Malt Liquor in *France*,) in a "Cask, where the ſame being agitated, heated, di-"lated, and fermented, and having no Vent, "breaks impetuouſly through all Obſtacles, ſpread-"ing its Streams and Vapours all around; and ap-"pears ſo muddy, that we cannot diſcern the leaſt "Drop of Wine in the Veſſel. But after theſe diſor-"derly Motions, all the Impurities that were in

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" the Wine, are ſeparated; the Lees fall to the " Bottom, a Sort of Scum floats on the Top, and " the Concavity of the Veſſel is covered with a Sort " of cruſty Subſtance."

Thus far Monſ. *Solleyſell*; who, though he was one of the better Sort of Farriers, by way of Reaſoning, yet he was far wide of the Mark. For firſt, I inſiſt upon it, that there is no ſuch Thing as Fermentation in the circulating Blood; although I own the Tranſlation of Morbifick Matter in Fevers ſhews ſomething very like it, *viz.* That after the Blood's Ebullition, it throws off the offending Matter in Tumours and Eruptions much in the Manner of the Sediments of fermented Liquors. Yet, notwithſtanding this Appearance ſuits ſo pat with our outward Senſes, it is far from Truth; I mean, to imagine that there is a Poſſibility of the Blood's Fermentation, (any otherwiſe than as I have before deſcribed under this Term;) and if it only happens in the Manner I have pointed out, there is no Doubt but all the Effects, ſuch as Tumours, Eruptions, &c. may follow a Fever as well every whit, as if there was ſuch a Thing as Fermentation in the Blood.

A Fever defined.

In my Opinion, as well as ſeveral who have gone before me, a Fever is an augmented Velocity of the Blood; and the almoſt infinite Variety of Cauſes of this Diſtemper; does ſo diverſify its Appearances, and indicate ſo many Ways or Methods of Cure, that really it is no eaſy Matter to write down Rules for the Management of Horſes in ſuch Condition. However, I ſhall attempt it in the moſt conciſe and beſt Manner I am able.

Firſt then, the Blood (as all other Fluids) being compoſed or made of Liquid Parts, is therefore capable of being put into a more than ordinary Degree of Motion, both by external and internal Cauſes. When the Cauſe happens to be ſimple and external, as for Inſtance, when the Blood is violently agitated and put into a Hurry by the Heat of the Sun, or by violent and exceſſive Exercise;

ercise; I say, in such Case, the Fever will be only of the Symptomatick Kind: For in such Case the Blood is fused or melted like Wax, and consequently requires more Space in the Vessels, than when in its ordinary State; and likewise as it becomes more thin and fluid, its Motion increases, which is obvious enough, by reason all thin Liquors move with more Swiftness, than those that are thick. Add to this, the Compression the Blood meets with (when in this State) from the Sides of the Vessels, &c. which is in Proportion to the Degres of Fusion or Thinness. These Kinds of Fevers are regular and uniform: But when a Fever proceeds from any ill Quality in the Blood, as when it is too viscid and thick, occasioning Obstructions in the Vessels which are smallest; I say, the Blood being obstructed there, and meeting with such Opposition, must needs occasion great Disorders, especially while it flows in a greater Quantity than ordinary into any particular Part of the Body, and while it endeavours to find out proper Vents and Passages for itself. Now in both these Cases, the Glandular Discharges must in great Measure be hurt. But in complicated Fevers, some of the excretory Ducts or Pipes, by which the Glands discharge themselves, may be too open, whilst others are obstructed: And hence it is, that Nature is so much put to it in Fevers of every Species and Denomination; for in those that are most simple, she is over-power'd by a too great Quantity of Blood, occasioned by a too great Rarefaction as aforesaid, whereby it takes more Space in the Vessels than usual, and moves with so much Rapidity, as to discompose the whole Body. Likewise in those Fevers proceeding from vitiated Blood, she is oppress'd by violent Impulses and irregular Discharges, before the Blood, &c. can become of such a Texture or Make, as to render it fit to pass equally into all Parts; and therefore, it is observable, whatever Changes the Blood undergoes in all the different Kinds of Fevers, that so long as the

Diſeaſe laſts, theſe Changes muſt have a Tendency, either to an over-great Rarefaction or Thinneſs, or elſe to the over-great Thickneſs and Viſcidity of the Blood.

A Fever may proceed from an Inequality of the Subſtance of the Blood.

A Fever may likewiſe proceed from an Inequality of the Subſtance of the Blood, whereby ſome Parts of it paſs more eaſily than others through the ſmaller Veſſels. I ſay, this may produce the Symptoms common to Fevers; as violent and exceſſive Heat, and beating of the Arteries, *&c.* and this is ſo clear and evident, that it needs no Manner of Proof, ſince Heat muſt always be the Effect of Motion.

Some former Authors (and thoſe of Note too) have taken infinite Pains, to ſhew the different Kinds of Fevers from rarefied or thin'd Blood, as alſo thoſe ariſing from the viſcid and thick: But in my humble Opinion, though I have conſider'd them over and over again, they only argue to ſhew their Learning: For the *Ætiology*, or Doctrine, teaching (or rather pretending to teach) us the Knowledge of the Cauſes of Diſtempers, is a dark and abſtruſe Doctrine; and really it is no eaſy Matter to ſhew, how many F—ts go to an Ounce. Yet the Reaſoning and Arguments of many upon the aforeſaid Term, amounts not to a quarter Part of what's pretended; nor can ſuch in any Manner or Shape edify or improve our Underſtanding; ſince they only conſiſt of unintelligible Metaphors which rather puzzle and perplex the Reader than otherwiſe. Indeed I own, that the Art of Medicine is brought at laſt to very great Perfection, and many Things proved plain to a Demonſtration: But I think, with Submiſſion, that theſe Improvements and Diſcoveries go no farther, than ſhewing us *the Force and Manner of Operation of Medicines.* And in this Part of Knowledge, there is no Doubt, but Natural Philoſophy has the greateſt Share. I ſhall therefore ſhun, as much as in me lies, all dark and abſtruſe Reaſonings, as well as unintelligible Terms, and ſo proceed to give my Opinion upon what is called a *Simple*, or rather *Symptomatick Fever*.

CHAP.

CHAP. VII.

Of a Symptomatick Fever.

I HAVE explained, under the Sixth Chapter, what I mean by a Symptomatick Fever, *viz* that it is a Fever proceeding from Accidents, rather than any noxious Quality in the Blood itself: As for Inſtance, the Gout in Human Bodies cauſes a Symptomatick Fever, ſo does the firſt Milk in Women's Breaſts; and in Brute Creatures, as I have ſaid, *too violent Exerciſe in hot Weather*, or in Cold, when not duly managed afterwards. Symptomatick Fever, what.

Secondly, this Fever may be occaſioned by turning a Horſe to Graſs in very hot Weather; eſpecially if the Incloſure be ſmall, where there is but little Air, and where there is not any convenient Shade to cover him from the ſcorching Heat of the Sun.

Mr. *Gibſon*, in his Book of Farriery, ſays, that "this Fever (I mean what he calls *Simple*, and "what I term *Symptomatick*) may be cauſed by "Bleeding a Horſe in the Heat of the Sun, in a "hot Seaſon, without houſing; and that becauſe "during the Operation the Blood is put into a "greater Motion than ordinary, and that this new "Motion is kept up and increaſed by the additional "Heat of the Weather." And he farther ſays, "that this Doctrine may be illuſtrated by the com-"mon Effects of Fire under a Pot or Kettle, where "the Heat of the Water increaſes more in the "ſame Spaces of Time, according to the Degrees "of its Motion, tho' the Fire be not increas'd." Now, for my Part, I frankly confeſs, I don't rightly apprehend Mr. *Gibſon*'s Meaning, unleſs it is, that the Water heats more in the ſame given Time when near boiling, than it did a while before; but at beſt this is only a very lame and unſatisfactory Experiment.

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External Cold or Perſpiration, hindered, produces a Fever.

In the next Place, external Cold, which hinders that natural Perſpiration or inſenſible Sweating, ſo beneficial to both Man and Beaſt, may bring on this Fever: For by hindering Perſpiration, the Quantity of Blood is increaſed, and that too with ſuch a Fluid, as is far from the *Homogene* or benign Nature of it.

And here it may be obſerved, with reſpect to Cauſes and Effects, that the ſame Cauſe will produce very often different Effects, and that the ſame Effect will often proceed from different Cauſes. For Cold, when its Effects are ſudden and univerſal, will cauſe as ſudden a Change in the Blood. But when Cold is only partial or gradual, it will have a much different Effect; ſuch as touching the Brain, Lungs, or ſome other particular Bowel: Yet notwithſtanding all this, the different Effects which we may obſerve from the ſame Cauſe, or the ſame Effect proceeding from ſeemingly oppoſite Cauſes, may only ariſe from the different Degrees of Efficacy in the Cauſes themſelves. Wherefore we cannot be exact and competent Judges thereof, eſpecially as they are exerted in the Animal Body, which is infinitely various in its Compoſition and Structure. I ſhall now proceed to give an Account of the Signs of a Fever in general.

The Signs of a Fever.

The Signs of a Symptomatick and continued Fever are, violent Heat, and Fullneſs of the Veſſels, which will appear even to the Eye; a Feeling of the Heart and Flanks much quicker than ordinary; a Dryneſs in the Mouth, with Roughneſs of the Tongue; continual Watchfulneſs and Reſtleſſneſs; inſomuch that if a Horſe be ſeized with this Fever in the Field, he will be perpetually moving from Place to Place, going often to the Water, but (as ſome Authors ſay) cannot drink; tho' really I am of Opinion all Creatures will drink if ſeized with a Fever: And notwithſtanding it was the former Practice to deny much Liquids in ſuch Caſe; yet the Moderns agree that Diluters are of all Things not

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to be denied, provided they consist of proper Mixtures, &c. Besides, when a Horse is seized with a Fever, he will often smell to the Ground without pasturing or feeding. These I think are the most common Signs. Now for the Cure.

The Cure.

Having laid down the Causes, as far as we may well judge, and also the Signs of a Symptomatick Fever, it remains that I go thro' the Methods of Cure; and herein we are to observe, that since there can be no Accidents in these Kind of Fevers but what depend upon the Augmentation of the Blood's circular Motion, and while in this State the Blood is not supposed to be in any wise, or at least but little vitiated, those Things are only to be done or administred, which tend to lessen the said Motion, and bring it to more quiet and sedate State. Therefore, Bleeding is in the first Place necessary, after which Clysters, compounded of a strong Decoction of *Senna*, with about a Quarter of a Pound of the coarsest Sugar dissolved in each, may be proper at due Intervals: for Example, once every Day *to keep the Horse's Body open.*

Clysters proper in Fevers.

There are not many Drugs required in these Fevers; for, as I have said, proper Bleeding, along with the continued Use of Clysters for about six Days, is sufficient to conquer the Disease, provided the Horse's Diet consist of proper Food, and this should be given him sparingly; for Nature is the best Guide, which (in Man as well as Brute Creatures) commands, that in most (or even all) Disorders, a strict Regard to be had *not to over-charge the Stomach*; for by such Management, She is so far from being assisted, that she is, on the contrary, hinder'd in her Efforts towards carrying off the Disease.

A Horse in a Fever should have no cold Water given him, but rather Milk and Water warm, with a little Oatmeal strewed upon it; and this may indeed be given him in pretty large Quantities, as a Diluter and Cooler of the Blood, &c.

A Horse in a Fever should have no cold Water.

Purging

Purging Medicines improper in Fevers.

Purging Medicines by the Mouth, ought never to be uſed in Fevers; for theſe raiſe new and terrible Commotions in the Blood in ſuch Caſes, and may in all likelihood occaſion an Inflammation in the Guts, by deriving or drawing a Quantity of the *Febrile* Matter that Way.

Before the Uſe of Clyſters as aforeſaid, the Farrier ſhould anoint his Hand very well with Oil or freſh Butter, and paſs it up the Horſe's Fundament, in order to bring away the harden'd Dung or Excrements; and his Clyſter-Pipe ſhould be long and large, that the Liquor may paſs as far as poſſible into the Guts. I know ſome Farriers who have Syringes or Inſtruments commonly called Squirts, which will contain at leaſt three Quarts of Liquid; and theſe, in my Opinion, are exceeding proper to inject Clyſters; For the Guts of a Horſe are not only large, but of a conſiderable Length, from the *Valve* in the *Colon* downwards; ſo that the Quantity injected or thrown up into the Gut, ought not to be leſs than two Quarts, foraſmuch as thoſe things which lie in leſs Room, are of too powerful a Nature to be made uſe of on theſe Occaſions; I mean, that if a Clyſter was contrived in a little Quantity ſo as to operate, it muſt be compounded of ſuch ſharp ſtimulating Ingredients, as perhaps might do more Harm than Good. Therefore, as I have ſaid, let all Clyſters in Fevers be mild in Operation, and large in Quantity.

A Clyſter in a Fever.

Take of Mallow Leaves, and Pellitory of the Wall, each four Handfuls; Annifeed, and Caraways bruiſed, of each one Ounce; boil them in four Quarts of Water to three, then ſtrain it off; and add of Gallipoly-Oil three Ounces, of coarſe Sugar four Ounces, Caryocoſtinum Electuary one Ounce, mix. The Caryocoſtinum coſts about 2 d.

Some add *Lenitive Electuary* three Ounces, or as the Nature of the Caſe requires. For really there

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is not any such Thing as prescribing general Rules in Fevers, which sometimes require more, sometimes less of Purgatives, such as the *Lenitive Electuary*, *Electuary* call'd *Caryocostinum*, or such like, to be mixed with the Clysters: But if what I have before prescribed cause the Horse to avoid his Excrements, I think it is sufficient without adding any Thing more purgative.

Clysters should be injected pretty warm; for Example, as warm as one can possibly hold the Bladder with the Liquor unto one's Cheek; and the Horse's Tail kept close to his Fundament for some Time, that the Clyster may be retain'd as long as may be. Clysters should be injected very warm.

There are many more Forms of Clysters prescribed, in ancient Authors, but this which I have set down may suffice, and will do as much service as all the rest, which are only of the like Intention.

I think it needless to enumerate all the different kinds of Fevers, such as the *Putrid*, the *Pestilential*, the *Hectick*, the *Intermitting*, and the like; seeing it would not be of Use to the Reader, and only serve to swell this Treatise, which I design to write as concise as possible, yet with all due Regard to the Distempers which Gentlemen can or may form just Ideas of. And therefore I at present quit the Subject of Fevers, and proceed to discourse upon what the Farriers commonly term *Surfeits*.

CHAP. VIII.

Of Surfeits.

AS this is a Term frequently used among Farriers, as well as all Sorts of People, to signify a Disease, I think it not amiss to say something in relation to it.

By a *Surfeit* is principally understood all such Maladies or Distempers as proceed from excessive and immoderate Feeding, but especially upon unwholesome What is generally meant by a Surfeit.

ſome Food; from Cold and Hard-riding, *&c.* whereby a Horſe forſakes his Meat, and is infeſted with hard Swellings, which (if they happen to fall upon the Joints) will, in proceſs of Time, occaſion Lameneſs and many other Diſorders.

I will not ſay but Farriers call thoſe Horſes ſurfeited which do not thrive well, or have their Coats ſtaring and ſickle, (as the Term is;) But the Diſtinction I have made is moſt bounded and intelligible; for really theſe ignorant Fellows call all Horſes, which have been in Uſe, ſurfeited (if they don't thrive well) as I have already ſaid.

Now whatever be the original Cauſe of Surfeits, that is, whether they proceed from Colds, Exceſs of Feeding, or laborious Exerciſe, or from any Diſpoſition of the Air or Climate; it is very certain that whatever goes under the Notion of Surfeits, is no other than that which follows the *imperfect Solution* of a Diſeaſe: As when the Matter of the Diſtemper is, by Tranſlation, thrown or caſt off upon ſome particular Part of the Body, ſo as to occaſion Swellings, *&c.* But theſe Surfeits, which proceed only from a Glut of Provender, or the like, are eaſily cured, as their Cauſe is the moſt ſimple; whereas thoſe, on the other Hand proceeding from complicated Cauſes, are often the Effects of Chronick Diſtempers, or Diſtempers of long ſtanding. And therefore the Cure is hard and difficult, and indeed many Times ſuch Horſes are incurable.

But I imagine myſelf better to be underſtood, if I give my Thoughts concerning that kind of Surfeit which proceeds from Over feeding or Foul feeding; for, by the Knowledge thereof, all that is neceſſary concerning Surfeits will be more intelligible, as it is this alone which truly and properly ſpeaking, conſtitutes a Surfeit.

Firſt then, we are to conſider, that while the Stomach is conſtantly receiving Food, and as conſtantly tranſmitting new Supplies of Chyle or nutritive Juice to the Maſs of Blood, that therefo

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the Blood-Veſſels become diſtended and full, inſomuch that what is over and above ſufficient for a Horſe's juſt Nouriſhment, cannot be carried off by the proper Outlets; that is to ſay, the Canals or Pores of the Extremities are not wide enough to admit of ſo much groſs Matter as is ſeparated by the Glands of the Inteſtines or Guts; and conſequently the Diſtention of the Veſſels will be more and more increaſed: And here it may not be thought amiſs to ſhew, as briefly as may be, how Animal Digeſtion is performed. And firſt I ſay,

Animal Digeſtion is the Diſſolution or Separation of the Aliments into ſuch minute Parts, as are fit to enter the *Lacteal* or milky Veſſels, and circulate with the Maſs of Blood; or, it is the ſimple Breaking of the Coheſion, or ſticking together of all the little *Moleculæ* or Cakes and Lumps, which compoſe the Subſtances any Animal feeds upon. Now the principal Agents employ'd in this Action, are, *firſt*, the Juices ſeparated by the ſalivary Glands or Glands about the Mouth and Throat. *Next* to the Saliva may be reckoned the Juice of the Glands in the Stomach, and the Liquors we drink, whoſe chief Property is to ſoften the Aliments, as they are Fluids which eaſily enter the Pores of moſt Bodies, and by ſwelling them break their moſt intimate Coheſions: And how prodigious a Force Fluids have when acting in ſuch a Manner, may be learned from the Force that Water, with which a Rope is wetted, has to raiſe a Weight faſten'd to and ſuſtained at one End of it. And this Force is much augmented by the *Impetus* or Stroke which the Heat of the Stomach gives to the Particles of the Fluid. Nor does this Heat promote Digeſtion thus only, but likewiſe by rarefying the Air contained in the Pores of the Food, which helps to burſt its Parts aſunder: And therefore ſuch Liquors as are moſt Fluid, or whoſe Particles have the leaſt Viſcidity or Clammineſs, are moſt proper to aſſiſt the Faculty I am treating of; by Reaſon ſuch Liquors

Animal Digeſtion explained.

quors can the more eaſily inſinuate themſelves into the Pores of the Aliments. And of all other Fluids Water ſeems the moſt fit for this Uſe: For, though ſome ſpirituous Liquors may as eaſily penetrate the Subſtances we feed upon, yet they have another Property by which they hurt, rather than help Digeſtion; and that is, their Particles have a ſtrong attractive Force, by which, when imbibed into the Subſtance of our Food, they draw the Parts thereof nearer to one another: So that in Fact, they contract and harden, inſtead of ſwelling and diſſolving our Victuals. And it is by this Property, that they preſerve from Corruption Animal and Vegetable Subſtances; not but that we ſometimes find they help Digeſtion, as they irritate and excite the Coats of the Stomach to a ſtronger Contraction; and therefore, when they are duly diluted, they may not only be uſeful but requiſite. I ſay, when the Food is thus prepared, its Parts are ſoon ſeparated from one another, and diſſolved into a Fluid with the Liquors in the Stomach, by the continual Motion of its Sides, whoſe abſolute Power is demonſtrated to be equal to the Preſſure of 117083 Pound-weight in a Human Body, and in a Horſe this Force or Power of Digeſtion is near double: To which, if we add the Power of the *Diaphragm* or Midriff, together with the Muſcles of the *Abdomen* or lower Belly, which likewiſe conduce to aſſiſt in Digeſtion, then the Sum in a Human Body will amount to 250734 Pound-weight, which has been proved to a very great Nicety by Dr. *Wainright*, and others. And ſince I am advanced thus far into a Diſcourſe upon Digeſtion, I hope it will not be unentertaining for me to ſhew how Nutrition is performed. Under this Term may be comprehended, *Firſt*, all that paſſes under Digeſtion as already mentioned, *Secondly*, the Appoſition of new Parts in the room of thoſe wore off by Action: But here is to be taken Notice, that the Parts of the Food are not diſſolved into eſſential Parts, (as ſome call them,)

Nutrition what, and how performed.

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r Elements, whether Chymical, or any other, by he Assistance of a Ferment in the Stomach; that is o say, by a Separation of some Parts of different kinds combined together, and an Union of other Parts before in Separation, as it happens in all Fermentation of Wine, wherein *Tartarous* Particles, before united with others, are separated; and Particles of Phlegm and Oil, which were before in Separation, are brought nearer together, and form a true Spirit. But, by the Concoction which is performed in the Stomach, the Food is divided into integral Parts, not differing from what they were before, but only in obtaining lesser Bulk; in the same Manner altogether as Coral is ground upon a Marble with Water, and reduced into an impalpable Powder, whose Parts are only small Pieces of Coral, and not any Principles into which Coral is resolved, as has (by ignorant Chymists) been foolishly imagined: For the Proof of this Assertion, there needs no other Argument than, that in the Stomach and Intestines of the larger Fish, which devour and digest the lesser, the Chyle is nothing else but a Liquor filled with the Fibres of the devoured Fish, as may easily be discerned with a Microscope; or the small Parts of Fibres no way differing from the larger (that is indigested Pieces of Flesh) but in Magnitude. The Chyle thus elaborated or concocted in the Stomach, by its alternate Contractions, and the Force of the neighbouring Muscles, is thrown out into the Intestines or Guts; as its Entrance into which, it is diluted with Bile or Gall, and Pancreatic Juice, (or Juice separated for this End by the Gland called the Sweet-Bread;) and these Liquors do not undergo any Effervescence or Fermentation with the Chyle, or with one another, but are smoothly and quietly mixed therewith, and with each other, as appears by many and repeated Experiments. But by Means of the Bile or Gall and Pancreatic Juice, the Chyle is rendered more Fluid: And hence it is, that the Parts of the Food,

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(in ſome Meaſure diſſolved by the Motion of the Stomach, but not ſufficiently ſeparated from each other, through want of a due Quantity of Fluid, every one yet being in ſome Meaſure in Contact with each other) paſs over the *Pylorus* or lower Orifice of the Stomach into the Guts; and when theſe greater or leſs digeſted Particles cannot, by reaſon of their Magnitude, be ſtrained in any conſiderable Quantity into the Lacteals, they are thruſt yet farther into the Inteſtinal Tube, and therein putrify, ſince they are out of the Verge of Circulation, which commences at the Lacteals: For all Things, as the Fleſh of dead Creatures, Herbs, &c. which are capable of Putrefaction out of the Animal, are capable of Digeſtion in it. And from hence it is that Digeſtion is much more effectually and expeditiouſly performed in the Day-Time, or when the Animal is awake, than in the Night or during Sleep: Becauſe while awake, every Creature breathes thicker, and the *Diaphragm* or Midriff and Muſcles of the *Abdomen*, and even of the whole Body, are more exerciſed, and the Stomach oftener compreſs'd. It alſo follows, that by gentle Walking (or while any Animal exerciſes in a moderate Degree,) Digeſtion is more effectually and expeditiouſly performed, than while in Idleneſs and without Motion. And that this is the true Theory of Digeſtion and Nutrition (I mean that it is the Motion of the *Diaphragm*, &c. which conduce in a great Meaſure to theſe great Ends) will appear from the very Phiz or Countenance of a hard Student, more eſpecially if he betake himſelf to this Work ſoon after Eating; for, by this his Viſage looks pale and wan, for no other Reaſon than that the Mind is ſo diverted, that Reſpiration or Breathing is more rare or ſeldom, that is, we do not fetch our Breath near ſo often, as even when we ſleep, which is a very bad Situation for Digeſtion: Add to this the Determination of the Animal Spirits, which after eating a hearty Meal, ought to flow in greater Abundance to the Stomach,

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in order to assist Digestion. For this so very sensible Membrane is touched with a pleasant Titillation after Eating, which determines the Animal Spirits, as I have said, towards the Stomach. But on the other Hand, when the Mind or Cogitative Soul is taken up with the Resolution of dark and problematical Questions, or the like; I say, this determines the Animal Spirits towards the Brain; whereas Nature designs them, for some Time after Eating, for the Use aforesaid. From hence it may be observed, how necessary it is for Students to unbend the Mind by some kind of Musick, or other Pleasure of like Kind and Benefit, to forward Digestion; otherwise, as I have already hinted, their Visage will be pale, sallow, and wan.

It is also observable, that we digest better in Winter than Summer; because in the Winter, to drive away the Sense of Cold, we are oftener put upon Exercises and greater Activity of Body, than in the Summer Season: As likewise, because the Muscles and solid Parts are more Tense and Firm, and consequently stronger, in their Contractions and Attractions. But as for any Ferment in the Stomach, whether it be *Saliva* or *Serum*, ousing out from the Glands of the Stomach, it cannot contribute any Thing to the Digestion of the Food any further than by softening it, whereby it is capable of being further divided. Neither do any Liquors flow into the Stomach to promote Digestion; but Digestion, that is, the Motions of Swallowing, Chewing, and of the Stomach, are the Cause why these Liquors are pressed out, and that they drain into the Stomach. For that those Liquors contribute nothing (further than as I have mentioned) to Digestion, is manifest from hence, that if Herbs or Meats be mixed with them in any convenient Place, (as warm as the Stomach,) but without Motion, they will never be changed into Chyle. So that it is astonishing that any Writer should ascribe to the *Serum* of the Blood (as i is excerned or separated by the Glands) a Faculty

culty of changing ſolid Meats into Chyle; whereas it is evident, that the *Serum* or thin Part of the Blood, is not a fit *Menſtruum* or Diſſolvent for the Solution of Bread, Meat, or Herbs. But this Affair will be better underſtood from conſidering the never-to-be-forgotten, and juſtly celebrated Mr. *Boyle*'s Diſcourſe upon a Machine for Digeſtion, as deſcribed by *Rapin*; wherein, without the Help of any Ferment, but by the Aſſiſtance only of Warmth (and the Preſſure of ratched Air confined,) Bones and Fleſh, with the Addition of a ſmall Portion of Water, are turned into a Jelly, where nothing is wanting to its being made real Chyle, but the rough Superficies of a Body to grind and often ſhake it about.

The Chyle thus made, waſhes over the *Pylorus* or lower Orifice of the Stomach, into the Inteſtinal Tube or Gut called *Duodenum*, which in Horſes is 26 or 27 Yards in Length, and wider than in Oxen: It is ſomething narrower for about a Foot and an half from the Stomach, where the *Porus Biliarius* or Gall-Pipe, and *Pancreatick Duct* or Pipe which carries a Juice into this Gut from the Sweet-Bread, enter: After this the Chyle is by the *Periſtaltick* or Worm-like Motion of the Guts, and Preſſure of the *Diaphragm*, along with the Help of the Muſcles of the *Abdomen* or lower Belly,) ſtrained through the narrow Orifices of the Lacteal Veins, while the groſſer Parts continue their Motion downwards, (or rather backwards in a Horſe.) until they are quite ejected by Stool; what paſſes through the Lacteal Veſſels, is carried by them into the Glands of the Meſentery, where they receive a fine thin Lymph from the *Lymphaticks*, whereby the Chyle is ſo diluted, that it paſſes eaſier the reſt of its Courſe: For, beyond the firſt Glands, I mean the firſt in the Meſentery or Net, theſe Lymphatick Veſſels unite in larger Canals, and thoſe in ſtill larger, until at laſt it arrives (that is this thin Lymph) at the *Receptaculum Chyli* or common Receptacle of the Chyle,

Chyle, which is a kind of Paſon form'd for it, by the Union of the Lymphatick and Lacteal Veſſels. From thence, in one Duct or Pipe, it aſcends the *Thorax* or Preaſt: and ſometimes dividing about the Heart, it immediately unites again; and creeping along the Gullet, it paſſes in Man to the left *Subclavian* Vein or Vein in the Arm-Pit; and in Horſes, into a Vein under the left Shoulder-Blade, where, by one or two Mouths it pours in its Contents, and there mixes with the Venal Blood, as it returns from all Parts of the Body. But in the ſecond Acceptation of this Term of *Nutrition*, wherein it is underſtood of the Blood's nouriſhing all the Parts of the Body, ſuch kind of Nutrition is performed by a *Secretory Duct*, or ſmall Pipe, ariſing from the Termination or End of an Artery, which carries a ſuitable Portion of Blood to every Part to be nouriſhed: So that every Point in the Body muſt be a Termination of a Secretory Duct, through which a proper Part of the Blood is convey'd, in order to ſupply that Part of the Body. And thus much for Nutrition, and the Courſe of the Chyle. Now it remains that I ſay ſomething about the Circulation of the Blood, and ſhew how, and in what Manner this ſo ſurprizing Piece of Mechaniſm is mechanically performed. But firſt of the Blood itſelf.

By the *Blood*, ſome underſtand not only the Fluid in the Veins and Arteries, but likewiſe that in the Lympheducts, Nerves, or any other Veſſels of the Body; becauſe they all of them contain Parts of the Blood ſeparated from it by Force of the Heart, and many of them by the Animal Mechaniſm return to it again, after Performance of their deſtin'd Taſk. And in this Acceptation it is taken in the Calculations of its Quantity and Velocities, both in Human and Brute Creatures, which, becauſe it is of the greateſt Moment to underſtand, I ſhall explain in as brief a Manner as may be. But firſt of the Heart itſelf.

First, I say, the Ventricles or Cavities in the Heart of a Horse, of a middling Size, are each of them capable of receiving four Ounces of Blood, or more; and therefore, being in their *Diastole* or Dilatation, we may suppose that they throw out at least four Ounces of Blood in each Systole or Contraction. The Heart of this Creature contracts about 1800 Times in an Hour, which is about one half slower than in Man; (I would be understood in a Healthful State;) but even this varies in some Measure according to the different Temperament, Sexes, and Ages: It is supposed there pass through the Heart of a Horse 1800 Times four Ounces, or 450 Pounds of Blood, in an Hour. Now the common received Opinion is, that the whole Mass of Blood in Man is about 25 Pounds, and in a Horse six Times as much; and therefore, according to this Allowance, a Quantity of Blood equal to the whole Mass passes through the Heart ten times in an Hour in Man, and in one Hour and twelve Minutes in a Horse. And from hence may be observed, how necessary it is to take away greater Quantities of Blood in many Cases, than is commonly practised; for what sensible Effect can the taking away a Quart of Blood from a Horse have upon him, if we consider that he has near 225 Times as much in his Body; or how much we may depend on what is called making a Revulsion, or drawing the Humours off by bleeding in the Tail? For Example, when the Distemper affects the Eyes, I say, in my own Thoughts little, nay very little, Stress can be put on the Practice, seeing the whole Mass of Blood passes through the Heart in an Hour. Therefore the Benefit of Bleeding accrues from the Quantity's being lessened, and more free Liberty or Room thereby given to the remaining Part. It is very surprizing to consider, how far the old Writers have been carried out of the true Doctrine and Nature of Things, by false and outward Appearances, such as those I am speaking of; and their Unwillingness to

The Quantity of Blood calculated.

search

ſearch after Truth, was the grand Cauſe of their dark and abſtruſe Reaſonings.

Now having the Number of Pulſes in any determinate Time, the Quantity of Blood thrown out at the left Ventricle of the Heart every Pulſe, and the Diameter of the *Aorta* or great Artery ariſing from the Heart; I ſay, theſe Things being known, it will be eaſy to find with what Degree of Celerity the Blood moves through the *Aorta*. For "the "Celerity with which a Fluid runs out at any "Orifice, uniformly and always running in the "ſame Quantity, is equal to the Velocity of a "Body which deſcribes a Space of the ſame "Length with that of a Cylinder whoſe Baſis "is equal to the Orifice, and whoſe Magnitude "is equal to the Quantity of Fluid that runs out "in the ſame time;" And this Theory might be yet farther illuſtrated, but my Time, as well as Room here, will not permit me to ſay much more about this Matter. However, I muſt not omit one Thing, becauſe moſt Farriers are ſo very ignorant, that they hardly know the Difference between a Vein and an Artery, but call them all in general Veins, notwithſtanding it is of the greateſt Concern, for the Cure of Diſeaſes, to have a perfect Knowledge of Anatomy. I ſay then, that the Sum of the Sections of the Branches of an Artery, is always greater than that of the Trunk or Body of it; and conſequently the Velocity of the Blood muſt always decreaſe, as the Artery divides into more Branches, and is by Experiment ſhewn to do ſo as 5233 is to 1; or the Blood moves 5233 Times ſlower in ſome Capillaries or very ſmall Branches of an Artery, than it does in the *Aorta* or great Artery. The Blood is received from the Extremities of the Arteries into the Veins, where it ſtill moves ſlower as it returns to the Heart again.

The Arteries are to the Veins as 324 to 441, and conſequently the Blood moves in the Veins above 1116 Times ſlower, in Man, than it does in the

Aorta or great Artery arising out of the left Ventricle of the Heart.

There is no Time when all the Blood can be said to have once circulated: But if there were any such Time, the Quantity of Blood in the Body must be first determined, which is very difficult to do, and not yet fully agreed upon by hardly any two Persons.

Bleeding to Death cannot give a true Estimate of the Quantity of Blood in any Animal.

Bleeding to Death can never give the Estimate of its true Quantity; because no Animal can bleed longer than while the great Artery or *Aorta* is full, which will be longer or shorter as the wounded Artery is smaller or greater, and the *Aorta* must always be the first Vessel that empties.

The most certain Way, no doubt, is to find what Proportion the Cavities of the Vessels, of which the whole Body is composed, bear to the Thickness of their Coats: And this in the Veins and Arteries may be exactly found, but in the other Vessels, we only know the Quantity of Fluid they contain, by carefully evaporating as much as possible, which the ingenious Dr. *Keil* has try'd to a Nicety; and by his Experiments it is found, that the Liquors contained in the Vessels of the Body are (even at the lowest Calculation) one Half of the Weight of the whole Body. And if a Calculation be made on the Proportion of the Blood in the Arteries to their Coats, in a Body weighing 160 Pounds, there will be found 100 Pounds of Blood. I shall now proceed to a Description of that admirable Piece of Mechanism the Heart.

The Pericardium described.

In describing the Heart, it may be of Use to prefix that of the *Pericardium*, or Bag in which the Heart is contain'd, because they have such a near Relation to each other. The *Pericardium*, so call'd from περὶ, *circum*, *about*, and καρδία, *cor*, the *Heart*, is a thin Membrane of a Conic Figure, that resembles a Purse, and contains the Heart in its Cavity. Its Basis or Bottom-Part is pierced in five Places for the Passage of the Vessels which enter and come

come out of the Heart. It lies in the *Duplicature* or Doubling of the *Mediaſtinum*, which is a double Membrane, formed by the Continuation of the *Pleura* or inner Lining of the Ribs, which ariſes at the *Sternum* or Breaſt-bone, and goes ſtreight down, thro' the Middle of the *Thorax* or Cavity of the Breaſt, to the *Vertebræ* or Bones of the Back. I ſay, this Membrane (which Nature has ſo wiſely formed to divide the *Thorax*, to the End that when one Lobe of the Lungs is hurt by a Wound, the other Lobe or Part of them may officiate,) contains in its Doublings, the Heart in its *Pericardium*, the *Vena Cava* or hollow Vein, the *Oeſophagus* or Gullet, and the *Stomachic Nerves*. The Uſe of the *Pericardium* is to contain a ſmall Quantity of a clear watery Lymph, which is ſeparated by ſmall Glands in it, that the Surface of the Heart may not grow dry by its continual Motion.

Mediaſtinum deſcribed.

This wonderful Engine is ſituated in the Middle of the *Thorax* or Cavity of the Breaſt, between the two Lobes of the Lungs; it is of a Conic Figure, whoſe Baſis is the upper End or towards the Horſe's Head, and its *Apex* or Point, the lower End as we call it, which is turned a little to the left Side, that the right Auricle (or Ear of the right Ventricle) may be a little lower than the left, by which Means the refluent Blood in the *Cava* aſcends the more eaſily in Human Bodies; but in Horſes the Point of the Heart is not turned ſo much to the left, by reaſon the returning Blood brought by the *Vena Cava* to the Heart does not riſe ſo perpendicularly as in Man.

The Heart is ty'd to the *Mediaſtinum* and *Pericardium*, both which I have deſcribed, and ſuſtain'd by the great Veſſels which bring and carry back the Blood. It is cover'd by a Membrane or thin Skin, which is of the ſame Sort of that with which the Muſcles are cover'd. Its Baſis or Bottom Part is always ſurrounded with Fat. It has two Veins which open into the *Cava* or Hollow-Vein immediately before

The Heart deſcribed.

fore it empties itself into the *Auricle*; and they are accompanied by two Arteries, from the *Aorta* or great Artery, which runs thro' all the Substance of the Heart; they are called the Coronary Vessels. The Arteries bring the Blood for Nutrition and Motion of the Heart, and the Veins carry back what is superabundant. The Branches of the Veins on the right Side communicate with those of the left; and in like Manner do the Arteries on each Side communicate with one another; and it is the same, tho' not every where so evident, in all the Parts of the Body.

The Heart receives a Multitude of small Nerves from the *Eighth Pair* (as they are called by Anatomists;) particularly they creep in great Numbers about the *Aorta* and the left Ventricle. It has also some Lymphaticks or Vessels which convey a thin Liquor which discharge themselves into the Lymphatick Duct or Pipe.

The Auricles described. At the Basis of the Heart there are two Auricles or little Ears, one on the right, the other on the left Side: Into the right Ear opens the *Vena Cava*, into the left the *Vena Pulmonalis*: The first discharges the Blood it receives from the *Cava* into the right Ventricle, and the second thrusts the Blood which comes from the *Vena Pulmonalis* into the left Ventricle.

The left Auricle is less but thicker than the right; their Substance is composed of two Orders of Muscular Fibres, which terminate in a Tendon or sinewy Substance. At the Basis of the Heart, and at the right Ear, there is a Circle like to a Tendon where the *Cava* ends.

Their external Surface is smooth, their internal is unequal, full of small fleshy Pillars, which send out small Fibres that cross and go thwart one another, and betwixt these Pillars there are as many Furrows. They receive Nerves from the Branches of the *Eighth Pair*. They have the same Motions as the *Systole* or *Diastole* of the Heart, that is to say, they dilate and contract in the same Manner.

The

The Uſe of the Auricles is to receive the Blood, which is brought by the *Cava* and *Vena Pulmonalis*, and by them 'tis to be thruſt forwards into the Ventricles of the Heart.

In the Heart there are two Cavities or Ventricles, which anſwer to the two Ears, one on either Side; the Sides of theſe Cavities are very unequal, full of Fibres and little fleſhy Productions, long and round, of a different Figure and Bigneſs, called *Columnæ* or Pillars: Betwixt theſe Fibres there are ſeveral Furrows in the Sides of the Ventricles, eſpecially in the left Ventricle, where they are deeper and longer. They contribute much to the cloſe Contraction of the Ventricles: And becauſe the Side of the right Ventricle is much thinner than the left, therefore there is often a ſmall Bundle of Fleſhy Fibres, which come from the middle Partition, call'd by Anatomiſts the *Septum medium*, to its oppoſite Side, to hinder it from dilating too much.

The right Ventricle ſeems much wider than the left, which is longer and narrower than the right, and its Sides ſtronger and thicker; and this, Nature has contrived ſo, becauſe it is the left Ventricle which by Contraction throws the Blood all over the Body. Therefore it was neceſſary the Sides of it ſhould be much thicker and ſtronger than thoſe of the right Ventricle. The two Ventricles are ſeparated by the *Septum medium*, which is properly the Inſide of the left Ventricle, ſince its Fibres are continued or joined with the Fibres of the oppoſite Side of the ſame Ventricle. The right Ventricle deſcribed.

The Veſſels which enter and come out of the Heart, are the *Vena Cava*, the *Arterea*, and *Vena Pulmonalis*, and the *Aorta* or *Arteria magna*. Its Veſſels.

The right Ventricle receives the Blood from the *Vena Cava* through the right Auricle or Ear, and at the Mouth of this Ventricle there are three Valves or Flaps made of a thin Membrane; they are of an Angular Figure, and called *Tricuſpides*; their Baſes are fixed to the Mouths of the Ventricles, The right Ventricle of the Heart deſcribed.

and their Points and Sides tied by ſmall Fibres to the fleſhy Proluſions; ſo that when the Ventricle contracts and the oppoſite Sides approach one another, the Points of the Valves meet, and their Lateral Springs being relax'd, the ſides are likewiſe made to join one another by the Blood which gets between them and the Sides of the Ventricle: The three Valves thus united form a Concave Cone, which hinders the Return of the Blood to the Auricle: It is from thence thruſt out at the *Arteria Pulmonalis*, which riſes immediately out of the right Ventricle; its Mouth is leſs than the *Cava*: It has three Valves called *Sigmoidales* or *Semilunares*, becauſe they reſemble a half Moon, or the old Greek *Sigma*, which was writ like a C. Their Subſtance is membranous; when they ſeparate, they give paſſage to the Blood from the Ventricle into the Artery, but they ſhut the Paſſage and are thruſt together by the Blood, if it endeavours to return.

The *Arteria Pulmonalis* carries the Blood to the *Vena Pulmonalis*, which diſchargeth itſelf through the left Ear into the Ventricle of the ſame Side. At the Oriſice of this Ventricle there are two Valves, called *Mitrales*, becauſe they reſemble a Mitre. They are broader than the other Valves, and are ſituated, and have the ſame Uſe as the *Tricuſpides* in the right Ventricle.

Deſcription of the Aorta.

The *Aorta* or great Artery, ariſes immediately out of the left Ventricle; it has three Valves, which have the ſame Uſe and Figure as the *Semilunares* in the *Arteria Pulmonalis*.

Deſcription of the Heart.

The Heart is a compound Muſcle, and its Subſtance is made of Fibres, of the ſame Nature as thoſe of other Muſcles: There are ſeveral Orders of them which have different Directions, and all their Tendons are in the Baſis of the Heart. From the *Aorta*, juſt by one of the Coronary Arteries, go out two Tendons, of which the firſt paſſes thro' the Pulmonary Artery (or Artery leading to the Lungs)

Lungs) and the right Auricle; the other, paſſes between the two Auricles: Theſe ſurround the Entry both of the *Aorta* and left Ventricle.

The Entry of the right Ventricle is alſo tendinous, but all the Fibres which terminate about the Pulmonary Artery, terminate fleſhy.

Now of the Fibres which ſpring from the right Ventricle and Pulmonary Artery, the Outermoſt, which are by much the fineſt, go in a ſtraight Line to the Point of the Heart. All the others, which are next the Surface of the Heart, wind towards the left Hand, till they arrive at the Point, where turning underneath themſelves, and under the right Ventricle, they wind up the left Ventricle towards the right Hand to their Inſertion in the Baſis. Under the ſtraight Fibres there paſs a few more almoſt ſtraight, from the Mouth of the right Ventricle to the Pulmonary Artery; and from the oppoſite Side of the Artery, to the ſecond Tendon of the Aorta, there paſs others; by both which the Mouth of the Pulmonary Artery is dilated in the Contraction of the Heart. Under all theſe, ſome which wind from the firſt Tendon of the Aorta towards the Point, when they come to the Middle of the right Ventricle, turn up again to the Root of the Pulmonary Artery, or terminate in the fleſhy Pillars and *Papillæ*. Theſe both contract the Ventricles, and dilate the Arteries at the ſame time.

The Mouths of the Ventricles are likewiſe ſurrounded with Semicircular Fibres, which aſſiſt the Valves in the *Syſtole* or Contraction of the Heart. On the Side of the *Septum Medium* (which is next the right Ventricle) ſome Fibres go ſtraight from the Baſis to the *Apex* or Point. All the Reſt of the Fibres are only twiſted round the Ventricle, and of theſe ſome creep half way, ſome more than half way, and then return to the Baſis, by the oppoſite Side; ſome again terminate in the fleſhy Pillars and *Papillæ*; the Reſt turn the point and ſeem to involve

the Heart more than once in their going from, and returning to the Baſis. And from hence it appears, that a much greater Number of Fibres involve the Left Ventricle than do the Right, ſeeing the Blood is by the Right Ventricle thruſt only through the Lungs, but by the Left through all the Parts of the Body, even to the Extremities and back again; for it is by the force of the left Ventricle, that the Blood returns to the Heart by the *Vena Cava Aſcendens* and *Deſcendens*: And that the Force or Contraction of this Ventricle might be every where ſtrong, and the Texture of the Heart firmer, theſe Fibres are not all parallel, or they do not run all with the ſame Obliquity; but the inner always decuſſate or croſs the outer, and frequently mix with one another. The Bone which is found in the Baſis of the Heart of ſeveral Beaſts, particularly the Stag, is nothing but the Tendons of the Fibres of the Heart oſſified; and this Bone (as it is falſely called) is found in Men. The Heart which is properly called a Muſcle, has two Motions, *viz.* *Syſtole* or Contraction, and the *Diaſtole* or Dilatation. In the firſt of theſe Motions, when the Fibres contract, its Sides ſmell, and its Cavities or Ventricles are ſtrongly preſs'd from all Parts. The Diaſtole is when it ceaſeth to act; its Fibres are lengthen'd, its Sides fall, and its Cavities become large and wide.

The Fibres of the Heart oſſified in ſeveral Animals.

The Force by which this Muſcle throws the Blood out of its Ventricles, or by which it contracts in its Syſtole, has employed the Enquiries of many in vain: And even the famous *Borelli*, with a great deal of Geometry to his Aſſiſtance, ſeems to have been far wide of Truth, in his calculating this Power in the Heart of a human Body. And as the Creature I am treating of has a Heart, which, in Contraction, throws out four Times as much Blood as a Man's; therefore it muſt act with four Times the Force. I ſay *Borelli*'s Miſtakes proceed moſtly from his Reaſoning upon improper Poſtulates,

Poſtulates, rather than the Inſufficiency of the Means he made uſe of: For Dr. *Keil* has ſince, by the ſame Helps from Geometry, much more ſatisfactorily determined it. For if we have the Velocity wherewith a Fluid flows out at any Orifice, without Reſiſtance from an anterior Fluid, it is eaſy to determine the Force which produces that Motion. But this would at preſent take up too much Time to perform.

The Hearts of any Creatures are to one another as their Weights; and it is computed, that the Weight of (I mean the ordinary Weight) a human Heart is twelve Ounces, then its Force will be almoſt = eight Ounces: And although this Computation be ſomewhat more than has been formerly determined, yet it is of no great Moment, if we conſider *Borelli*'s, who required a Force in the Heart's Preſſure = 180000 *lb*. Weight, to move 20 *lb* of Blood: But this great Difference of his Calculation ſeems to ariſe from his not diſtinguiſhing between the Blood at Reſt and already in Motion: For, the Force of the Heart is not employed in moving any Quantity of Blood at Reſt, but only to continue it in Motion. Yet how this Motion firſt came, or was impreſs'd upon it, ſeems out of human Capacity to determine. However, this is certain, that if the Reſiſtance of the Blood bore always the ſame Proportion to the Force of the Heart, as it does now, the Blood could never at firſt be put in Motion by the Heart; for there is a vaſt Diſproportion between moving a Body at reſt, and keeping it in Motion when it has acquir'd it. This is diſcoverable, in a very eminent Degree, in the Flux and Reflux or Flowing and Ebbing of the Sea; for, the higeſt Tides are not preciſely on the New and full Moons, nor the Neapes on the Quarters: But generally, they are the third Tides after them, and ſometimes later; and the Reaſon is, that the Water's being put in Motion by the Action of the Luminaries, their Libration or ſwinging in the manner

The Reaſon why the higheſt Tides are not preciſely upon the Full or Change of the Motion.

ner of a *Pendulum* continues for ſome Time after the Full and Change: And though the Action of the Luminaries ſhould ceaſe, the Flux and Reflux of the Sea would, for ſome Time continue.

Now, did the Blood conſtantly move forwards with the Motion at firſt communicated to it, and did the Coats of the Veſſels make no Reſiſtance, the Poſterior Blood would not be retarded or hindered by the Anterior, or the Blood, thrown out of the Heart by the Contraction of the Left Ventricle, would not be retarded in its Motion by the Blood already in the Aorta or great Artery; and the Force of the Blood would equal the entire Force of the Mover. But, becauſe of the Reſiſtance made by the Coats of the Arteries and Veins, and the Force which is ſpent in diſtending them, the Blood is continually retarded in its Motion as it circulates, and, would, in a ſhort Time, ſtop, were not the loſt Motion made up by a freſh Impulſe from the Heart; and therefore the Force of the Heart muſt be equal to the Reſiſtance the Blood meets with in its Motion: If it were more, the Velocity of the Blood would be continually increaſing; if leſs, it would continually decreaſe, and at laſt ſtop. And from hence it is evident, that if the Circulation of the Blood was once ſtopped, all the Force of the Heart could never ſet it a moving again. I ſhall now proceed to ſhew how, and in what Way, the Circulation of the Blood is performed, in a more particular Manner, than I have yet done in my Deſcription of the Heart, &c.

To form a right Apprehenſion of the Animal Oeconomy, it is of the utmoſt Conſequence thoroughly to underſtand the Circulation of the Blood; for beſides what I have ſaid under the Titles, Blood, Heart, Syſtole, Diaſtole, and Aorta, it may be proper farther to take Notice here, and ſhew what is meant by an Artery, and afterwards, what is underſtood by a Vein: For really, moſt Farriers are ſo very ignorant, that they are in the Dark, with relation to

this

this ſo neceſſary Piece of Knowledge, in their Practice. The Ancients were not acquainted with the Circulation of the Blood, neither the Moderns, till that glorious Luminary of our Iſle firſt paved the Way to it, I mean the renowned WILLIAM HARVEY; born at *Folkſton* in *Kent*, and bred in *Caius College Cambridge*, where he commenced Doctor in *Phyſick*: he ſtudied five Years at *Padua* in *Italy*; and when he returned was made Phyſician to King CHARLES the Firſt. I ſay, this great Man, to whom we are ſo much indebted for a Diſcovery ſo eſſentially neceſſary for us to underſtand in curing Diſeaſes, was a great Benefactor to the College of Phyſicians in *London*, and died in the Year 1657, aged 80 Years. He was never married, but rather immortalized his Name by his Books *de Circulatione Sanguinis*, *de Generatione*, *& de Ovo*, &c

The Word Artery, as ſome imagine, is derived from ἀήρ, *Air*, and τηρέω, *ſervo* to keep; for the Ancients had a Notion of their incloſing a great deal of Air: But others, who underſtand their Uſe better, derive it ἀπο τῦ ἀίρειν; becauſe it continually riſes up with a Pulſe-like Motion. There are indeed three Ducts or Pipes in the Body, to which the Name is aſcribed and applied, in which the Arterial Blood does not flow as in the reſt of the Arteries. And I muſt ſo far acknowledge my Ignorance in this Matter, that I do not really underſtand why theſe three Ducts ſhould be called Arteries; eſpecially two of them; they are the *Aſpera Arteria* or Wind-pipe, the *Arteria Pulmonalis*, and *Vena Arterioſa*, which laſt is a plain Contradiction. But indeed, all the Veſſels which convey Blood from the Heart, more properly are hereby included; and which is of that Conſequence to be well acquainted with, as deſerves a particular Deſcription; For really, moſt Farriers call all the Veſſels in the Body, without Diſtinction, Veins, and have no Notion of what is meant by an Artery. Firſt then I ſay;

An

An Artery deſcribed.

An Artery is a Conical Canal conveying the Blood from the Heart to all Parts of the Body. Each Artery is compoſed of three Coats, of which the firſt ſeems to be a Thread of fine Blood-Veſſels and Nerves, for nouriſhing the Coats of the Artery: The ſecond is made up of Circular, or rather Spiral Fibres, of which there are more or fewer *Strata* or Coverings, according to the Bigneſs of the Artery. Theſe Fibres have a ſtrong Elaſticity, by which they contract themſelves with ſome Force, when the Power, by which they have been ſtretched out, ceaſes; in like Manner as a Piece of Cat-Gut or Fiddle-String will do. The third and inmoſt Coat is a fine, denſe, tranſparent Membrane, which keeps the Blood within its Canal, which otherwiſe, upon the Dilatation or ſtretching out of an Artery, would eaſily ſeparate the Spiral Fibres from one another. As the Arteries grow ſmaller, theſe Coats grow thinner, and the Coats of the Veins ſeem only to be Continuations of the Capillary Arteries, and are formed much thinner, becauſe that Streſs or Preſſure of Blood does not lie againſt their Sides, as it does againſt the Arteries. And it is, in this Particular, ſo through the whole Animal Machine, Nature has ſhewn her admirable Mechaniſm and Workmanſhip: For if the Arteries were not formed of ſuch Conſtructure, how much more incident would any Animal be to dangerous Aneuriſms or Over-ſtretchings of the Arteries! This is ſo plain, that I ſcarce need inſiſt upon it; and I could give a Number of Inſtances, where Men, as well as Horſes, have been plunged into the difficult Caſe of an Aneuriſm, even by only wounding with a Lancet, or Fleam, the outermoſt Coat of an Artery: For by this unſkilful Bleeding, the Coats (I mean the two ſound Coats) are not able to reſiſt the Pulſation of the Artery, but are forced to yield and give Way; ſo that in Proceſs of Time, the Tumour from Arterial Blood will become as big as one's Head. The Cure

of

of which when practicable, may be seen under the Chapter of an Aneurism.

The Pulse is thus accounted for: When the Left Ventricle of the Heart contracts or draws together, and throws its Blood into the Aorta or great Artery, the Blood in the Artery is not only thrust forward towards the Extremities, but the Channel of the Artery is likewise dilated; because Fluids, when they are press'd, press again to all Sides, and their Pressure is always perpendicular to the Sides of the containing Vessels: But the Coats of the Artery, by any small Impetus or Force, (as one Bowl striking against another) may be distended. Therefore, upon the Contraction of the Heart, the Blood from the left Ventricle will not only press the Blood in the Artery forwards, but both together will distend the Sides of the Artery. When the *Impetus* of the Blood against the Sides of the Artery ceases, that is, when the Left Ventricle ceases to contract, then the Spiral Fibres of the Artery, by their natural Elasticity or Springiness return again to their former State, and contract the Channel of the Artery, till it is again dilated by the Systole of the Heart. This Diastole of the Artery is called its Pulse; and the Time the Spiral Fibres are returning to their natural State, is the Distance between two Pulses. This Pulse is in all the Arteries of the Body at one and the same Time; for while the Blood is thrust out of the Heart into the Artery, the Artery being full, the Blood must move in all the Arteries at the same Time. And because the Arteries are Conical, and the Blood moves from the *Basis* or larger End of the Cone, to the *Apex* or Point; therefore the Blood must strike against the Sides of the Vessel, and consequently every Point of the Artery must be dilated at the same Time that the Blood is thrown out of the Left Ventricle of the Heart: And as soon as the Elasticity of the spiral Fibres can overcome the Impetus of the Blood, the Arteries are again contracted. Thus two Causes operating

The Pulse in the Arteries accounted for.

operating alternately, the Heart and Fibres of the Arteries, keep the Blood in a continual Motion.

The chief Distribution of the Arteries.

The chief Distribution of the Arteries, is into the *Aorta Ascendens* and the *Aorta Descendens*, from which they are branched, like a Tree, into the several Parts of the Body.

I shall not trouble the Reader with a particular Account of the Ramifications or Branching out of the Arteries from the *Aorta*, under this Chapter, but rather choose to give an Account of the most considerable of them, as they fall in my Way, when I come to treat of the Distempers which require Manual Operation. And I judge this as the better Method, because Farriers, when they are obliged to perform any Operation, may, under such Heads, at once see what Hazard they run of wounding an Artery. Therefore I shall now proceed to shew the Difference between an Artery and a Vein.

The Arteries and Veins accompany one another for the most part thro' the Body.

The Arteries are mostly accompanied by Veins; that is, wherever a Vein is opened, you are to consider an Artery, as big as the Vein, is near at Hand. And although Nature has indeed (with her usual Œconomy) very well guarded the Arteries against the blundering Operator, by placing them deeper, or more hardly to be come at, than the Veins; yet every one must have heard what terrible and dangerous Consequences have befallen those Creatures, whether Human or Brute, who have had the Misfortune to have an Artery cut by Accident, or otherwise.

A Vein described.

The Veins are only a Continuation of the extreme Capillary Arteries reflected back again towards the Heart; and uniting their Channels as they approach it, till at last they all form three large Veins; *viz.* the *Vena cava descendens* or descending Hollow-Vein, which brings the Blood back from all the Parts above the Heart; and the *Cava ascendens*, which brings the Blood from all the Parts below the Heart; and the *Vena Porta*, which carries the Blood to the Liver. The Coats

of

of the Veins are the ſame with thoſe of the Arteries, only the Muſcular Coat is as thin in all the Veins as it is in the Capillary Arteries; the Preſſure of the Blood againſt the Sides of the Veins, being leſs than that againſt the Sides of the Arteries.

In the Veins there is not any Pulſe, becauſe the Blood is thrown into them with a continued Stream, and likewiſe becauſe it moves from a narrow Channel to a wider. The Capillary Veins unite with one another, as has been ſaid of the Capillary Arteries. No Pulſe in the Veins, and the Reaſon why.

In all the Veins which are perpendicular to the Horizon, (I mean in Horſes; for in human Bodies the Veins of the *Uterus* and the *Porta* are excepted) there are ſmall Membranes or Valves: Sometimes there is onely one, ſometimes there are two, and ſometimes three, placed together like ſo many half Thimbles ſtuck to the Sides of the Veins, with their Mouth towards the Heart. Theſe Valves are, in the Motion of the Blood towards the Heart preſſed cloſe to the Sides of the Veins; but if the Blood falls back it muſt fill the Valves; and they being diſtended ſtop up the Channel, ſo that little or no Blood can repaſs them. And that this is the Caſe of a Horſe troubled with the Farcin, (commonly called the Farcy) appears from the hard knotty Tumours in the Veins, eſpecially of the Legs, Thighs, &c. which ſhew themſelves in this Diſtemper. For the Blood is, in ſuch Caſe, too ſcous or clammy, and ſubject conſequently to a *Lentor*, or Slowneſs in Circulation: Therefore, in ſupporting its perpendicular Preſſure, the Veins are more than ordinarily ſtretched, and the Valves ſtrained accordingly; inſomuch that they appear plainly through the Skin or Hide. The Valves deſcribed.

Let any one but conſider this laſt Piece of Mechaniſm, I mean of the Valves or Flaps, in the Manner as the Leathern Flaps in a Pump Box, which are, as I have already ſaid, deſigned by Nature to ſuſtain the Blood in its perpendicular Preſſure,

Preſſure, and thereby eaſe the Heart; ſo that its Syſtole or Contraction need not be ſo ſtrong in order to drive the Blood round the Body, as would without theſe Valves, have been neceſſary; I ſay let any one conſider even the ſmalleſt Piece of the Creator's Architecture in Brutes as well as Human Bodies, and then tell me whether we are not (as the *Pſalmiſt* ſays) wonderfully formed.

No leſs ſurprizing is God's Handy-work in creating Animals in ſuch Manner, as that the Blood in the *Vena cava deſcendens* ſhould not preſs upon and hinder that in the *Vena cava aſcendens* from entering the right Auricle or Ear of the Heart; and in order to take off this Hindrance, there is a ſmall Protuberance juſt where the aſcending and deſcending Trunks of the *Cava* join, which not only hinders the deſcending Blood from preſſing the aſcending, but, moreover, diverts both into the Auricle. Now in this Caſe, a Valve would not have done the Buſineſs; for there would then have been ſome, though leſs perpendicular, Preſſure from the deſcending upon the aſcending Blood in the *Cava*: But by this Contrivance, the deſcending Blood from the Parts above the Heart, does not in the leaſt incommode the Paſſage of that below the Heart, but is ſupported by the Protuberance mentioned; in the ſame Manner as a long Stone put into a Wall to ſupport a Weight above it; as is common among Builders to perform, when they would have the Work project or jut out beyond the naked Face of the Wall, Pedeſtal, *&c.*

As I have ſaid in the Cloſe of my Diſcourſe upon the Arteries, ſo I ſhall ſay with relation to the Veins, *viz.* that I now forbear a particular Deſcription of them; but ſhall mention the moſt conſiderable Branches, as they occur to me, when I treat of the Diſtempers incident to Horſes.

Thirdly, I ſhall ſhew what is meant by an Animal Fibre; by reaſon ſuch Knowledge is abſolutely

needful

eedful to thoſe who are concerned in the Cure of Diſtempers, whether in Human or Brute Creatures.

A Fibre is an Animal-Thread, of which there re different Kinds; ſome are ſoft, flexible, and little elaſtick; and theſe are either hollow, like mall Pipes, or ſpongious, and full of little Cells, s the Nerves and fleſhy Fibres: Others are more olid, flexible, and with a ſtrong Elaſticity or pring, as the Membraneous and cartilaginous Fires: And a third Sort are hard and flexible, as ne Fibres of the Bones. In fine, the whole Animal Body is nothing elſe but a Compoſition of ſeeral Kinds of Fibres; and of theſe ſome are very enſible, but others deſtitute of all Manner of Senſe r Feeling: Some ſo very ſmall as not to be eaſily erceived; and others, on the contrary, ſo big as be plainly ſeen with the naked Eye: And moſt f them, when examined with the Microſcope or Magnifying Glaſs, appear to be compoſed of ſtill naller Fibres. A Fibre deſcribed.

Theſe Fibres firſt conſtitute the Subſtance of the ones, Cartilages or Griſtles, Ligaments, Membranes, Nerves, Veins, Arteries, and Muſcles. nd again, by the various Texture and different ombination of ſome or all of theſe Parts, the ore compound Organs are framed; ſuch as the ungs, Stomach, Liver, Legs, and Arms, the Sum all which makes up the Animal Body.

As for that particular Property of Elaſticity or ower of Contraction, after the Diſtractile Force is moved, upon which the Knowledge of the nimal Mechaniſm ſo much depends, too much ins cannot be taken for rightly Underſtanding it. nd,

Firſt, it is well known that any Veſſel or Membane may be divided into very ſmall Fibres or hreads, and that theſe Threads may be drawn out o a very conſiderable Length without breaking: d that when ſuch external Force is removed, they

they will again reſtore themſelves to their prope Dimenſions. It is further alſo manifeſt, that th Property is preſerved to them by a convenien Moiſture, becauſe if one of theſe Threads lie drie it immediately loſes it; ſo that upon the Appl cation of any Force to ſtretch it, it will break; a alſo will its lying ſoaked in Liquor too much ren der it flaccid or flabby, and deſtroy all its Power o Reſtitution when diſtended.

Now ſome Hints of that Conformation of Parts upon which this Property depends, may be ha from the Contrivance and Properties of a Syringe o Squirt, with the Reaſons why it is ſo difficult t draw back the *Embolus* or Piſton, when the Cy linder or Pipe in which it plays is ſtopped; an the Neceſſity of any Liquor's following it, wherei the Pipe is immerſed or dipt.

All that is neceſſary to this Contrivance is, tha the *Embolus* be ſo exactly adapted or fit to th inner Surface of the Barrel, as to prevent any Ai paſſing between them when it is drawn up; that i matters not what Figure the Barrel is of, ſo tha the *Embolus* is well fitted to it; and it might eaſil be contrived to make a Caſe of Syringes, wherei every Barrel may alſo ſerve as an *Embolus* to it Exterior, which immediately includes it: And i this Manner, it is not at all difficult to imagine a continued Series of Particles ſo put together, tha the inner may be moved and drawn upon one ano ther, without ſuffering the Air immediately to en ter into the Interſtices or Diviſions, made by thei Diſtraction or being ſtretched: Whereupon, a ſoon as that Force which drew them is removed they will, for the very ſame Reaſon as the *Embo lus* of a Syringe, ruſh up again into their forme Contacts.

All the Fibres of a living Body are in a State of Diſtraction.

I could farther illuſtrate this Theory by demon ſtrating, that all the Fibres in a living Body are i a State of Diſtraction, that is, they are drawn ou into a greater Length than they would be in,

ſeparate

parated from any Part, and taken out of the Body; hich plainly appears upon any *Solutio Continui*, or viding of the Parts by a Wound, *&c.* I mean here ſuch Diviſion is tranſverſe or a-croſs. But is Explanation might, perhaps, ſeem a little too rolix for my intended Brevity: I ſhall therefore nclude with ſaying, that when the Arteries, hich (as I have ſhewn) are a Compoſition of ibres, are raiſed by the Impulſe of the Blood from e Heart, to a certain Meaſure or Pitch, wherein eir Endeavours of Reſtitution will exceed the mpulſe that raiſed or diſtracted them, their Contractile Powers will draw them again into the me Dimenſions they were in before ſuch Impulſe, d conſequently the Blood will be thruſt forward to the next Section of the Artery, and ſo on ſucſſively from one to another through the whole ourſe of its Circulation; the Contraction of one ction of an Artery being the true Cauſe of the ood's Impulſe againſt, and raiſing the next.

The moſt natural Conſequence of this Motion ll be breaking ſtill ſmaller the Parts of that Fluid, hich is diſpenſed to lubricate or facilitate the otion of the Fibres; which Communition will ntinue till it is rendered ſo fine as to fly off at the rface whenever it happens to get there; and that hich thus inſenſibly flies off, is the true *Materia erſpirabilis* of *Sanctorius*, which the Author has learnedly treated upon. But, before it is ſo oke, and ſerves for the Purpoſes aforementioned, is that which is to be underſtood by the common erms of Animal Spirits or Oil, *Liquidum Nervon*, *Succus Nervoſus*, the Nervous Fluid or Juice, d the like; and any Thing elſe, denominated a irit in a Human Body, (that is not ſubject to echanical Laws) belongs to another Order or Set Men to explain; but in my Thoughts, lies ite out of the Reach of that Reaſon which a yſician is compelled to take up for his ſureſt uide. And I hope to ſhew in the Sequel of this Treatiſe,

Sanctorius's *Materia Perſpirabilis*, what.

tiſe, that a Practice founded upon innate Principles occult Qualities, metaphyſical Dreams about Principles and Ends, *&c.* is a Practice which cannot bear the Teſt, but conſiſts in the Nugatory Production of Reaſon miſimployed. But that this was the Caſe of moſt of our Ancient Authors in Phyſick as well as the Science I now write upon, is too plain to admit of the leaſt Controverſy.

Fourthly, I ſhall ſhew what is meant by a Nerve and then proceed to give an Account of the Diſtempers which affect all or any Parts of the Body of this ſo ſerviceable a Creature which I am treating of.

A Nerve deſcribed.

A Nerve is a long and ſmall Bundle of very fine Pipes or hollow Fibres, wrap'd up in the *Dura* and *Pia Mater*, or the two outermoſt Membranes of the Brain.

The *Pia Mater*, which is an exceeding fine thin Membrane immediately covering the Brain, not only covers all the Nerves in common, but alſo incloſes every Fibre in particular.

The ſpinal Marrow, what.

The Medullary or Marrowy Subſtance of the Brain, which was by the *Latins* called *Medulla Oblongata*, is that Part of the Brain within the Scull upon the back Part, which is the Origin or Beginning of the Spinal Marrow; and this Medullary Subſtance is the Source and Fountain of all the Nervous Syſtem in Human and Brute Creatures. It paſſes through a Hole in the hinder Part of the Scull, down the *Vertebræ* or Bones of the Neck and Back, and from thence ſends out Branches to the Cheſt, Abdomen or lower Belly, Limbs, *&c.*

The ſpinal Marrow the Seat of Senſation in all Animals.

The *Medulla Oblongata* is accounted the common Senſory or Seat of Senſation in all Animals, and although the Ancients imagined the Soul to have its Seat in the Stomach, by reaſon of that Bowel's being indued with ſo exquiſite a Senſation; and after them the Moderns fancied it took up its Reſidence in a Gland ſituate upon the upper Part of the Brain, found out by *Pineus*, and therefore term'd

erm'd *Glandula Pinealis*; tho' *Snape* will have it rom its Shape, which is like a Pine Kernel, to be alled Pineal: I fay, this Glandule was the famous *Des Carte*'s imaginary Seat of the Soul; though in ny Opinion, this Author feated the fame very omely: For, this Gland in a Human Body, does ot exceed the Bigneſs of a Pea, and is placed in he very *Anus* of the Brain, and no doubt ſerves for he ſame, and no other Purpoſes.

The Medullary Subſtance of the Brain is the Beginning of all the Nerves, as I have already ſaid; nd it is very probable that each Fibre of the Nerves, anſwers to a particular Part of the Brain t one End, and to a particular Part of the Body t its other End; that, whenever an Impreſſion is nade upon ſuch a Part of the Brain, the Senſitive oul may know, that ſuch a Part of the Body is ffected.

Each Fibre of the Nerves we ſuppoſe anſwers to a particular Part of the Brain.

The Nerves do ordinarily accompany the Arteries through the whole Body, that the Animal pirits may be kept warm, and moving, by the ontinual Heat and Pulſe of them. They have alſo lood-Veſſels as the other Parts of the Body; and heſe Veſſels are not only ſpread upon their Coats, ut they run alſo among their Medullary Fibres, as ay be ſeen amongſt the Fibres of the *Retina*, fine thin Membrane at the Bottom of the Eye, mediately ſpread upon the Optick Nerve,) which ſhall deſcribe when I come to treat upon the iſtempers of the Eye. Therefore, at preſent, I all cloſe this Deſcription of the Nerves, for it ould be tedious to the Reader to enumerate the Pair of Nerves which ariſe immediately within e Scull; as alſo the thirty Pair which branch out tween the *Vertebræ* or Bones of the Neck and ck, *viz.* ſeven Pair of the Neck, twelve of the ck, five of the Lions, and ſix of the *Os Sacrum* Bones next the Dock: The great Branches of eſe laſt, with a Branch of the fourth Pair of the ins, make the *Nervus Sciaticus*, which (in hu-

The Nerves accompany the Arteries.

man

The Seat of the Sciatica or Hip-Gout.

man Bodies) is the Seat of the Hip-Gout or *Sciatica*; and in Horſes, no doubt, there often happens a Pain in the Hip, which makes the Muſcular Fleſh, on that Side, waſte and fall away. So that it is frequently miſtaken for a Diſlocation of the Hip-Bone.

Reſpiration or Breathing defined.

Laſtly, I ſhall (as briefly as may be) ſhew what Reſpiration is; for, certainly there is an abſolute Neceſſity of underſtanding how this is performed, or otherwiſe, a Perſon can but have very dark Notions of the Animal Oeconomy.

And *firſt*, it is obſervable, that by blowing into a Bladder, a conſiderable Weight may be raiſed by the Force of our Breath. For with a Bladder that is Oblong, nearly of a Cylinderical Figure and tied at both Ends, if a Pipe be fixed at one End, and a Weight at the other, and the Pipe faſtened at ſuch a Diſtance from the Ground, as juſt to allow the Weight to reſt upon the Ground; the Bladder by an eaſy Inſpiration, will raiſe half a Stone Weight or ſeven Pounds, and by the greateſt Inſpiration of a pretty ſtrong Man, it will raiſe two Stone or 28 Pounds Weight.

Now the Force by which the Air enters this Pipe, (which conveys it to the Lungs,) is that ſame Force by which it is driven out of the Lungs: If therefore the Force by which the Air enters the Pipe can be determined, we ſhall have the Force by which the Air is drove into the *Aſperia Arteria* or Wind-pipe.

The Preſſure of the Air upon the Bladder, is equal to twice the Weight it can raiſe; becauſe the upper Part of the Bladder being fixed, it reſiſts the Force of the Air, juſt as much as the Weight at the other End. And again, ſince the Air preſſes every way equally, the whole Preſſure will be, to that Part of it which preſſes upon the Orifice of the Pipe, as the whole Surface of the Bladder is to the Orifice of the Pipe: That is, as the Surface of a Cylinder, whoſe Diameter,

meter, for Inſtance, is four Inches and Axis ſeven, is to the Orifice of the Pipe.

To explain this yet farther, according to the niceſt Calculations, it would appear liker a Romance than a true Hiſtory; altho' it is certain that there is, even in human Bodies, a Preſſure of Air upon the internal Surface of the Lungs, equal to 14412 Pound Weight; and therefore, how much more the Air's Preſſure upon a Horſe's Lungs exceeds this Account, I leave any one to judge. And although theſe ſeem to be prodigious Weights, yet it muſt ſtill be underſtood, that the Preſſure upon each Part of the Surface of the Lungs, equal to the Orifice of the Larynx or Top of the Wind-pipe, is not greater than it is at the Larynx itſelf. And that theſe vaſt Weights ariſe from the vaſt Extent of the Surfaces of the Veſicles or little Bladders, upon which it was neceſſary that the Blood ſhould be ſpread in the malleſt Capillary Veſſels; that each Globule of Blood might, as it were, immediately receive the whole Force and Energy of the Air, and by it be broke into ſmaller Parts, fit for Secretion or Diſcharge, and likewiſe for Circulation.

The Preſſure of the Air upon the internal Surface of the Lungs, equal to 14412 *lb.* Weight in Human Bodies.

From hence we may learn the mechanical Reaſon of the Structure of the Lungs: For, ſeeing the whole Blood of the Body was to paſs through them, in order to receive the vivifying Virtue of the Air, and this could only be communicated to it by ſmall Capillary Veſſels; I ſay, in ſuch Caſe, it was abſolutely neceſſary that the Surfaces upon which theſe Veſſels were to be ſpread, ſhould be proportioned to their Number, and this is admirably well provided for, by the wonderful Fabrick of the Lungs.

If the Gravity of the Air was always the ſame, and if the Diameter of the *Trachea Arteria*, ſometimes called *Aſperia Arteria* or Wind-pipe, and the Volume of every Expiration or Driving out of the Breath, were equal in all Creatures, this Weight upon the Lungs would be always the ſame. But

ſince we find by the Barometer, that there is three Inches Difference between the greateſt and the leaſt Gravity or Elaſticity of the Air, which is a tenth Part of its greateſt Gravity, there muſt be likewiſe the Difference of a tenth Part of its Preſſure upon the Lungs at one Time more than another. For the *Momentum* of all Bodies, moved with the ſame Velocity, are as their Gravities.

This is a Difference which ſuch as are aſthmatick (or what in Horſes is generally called a broken Wind) muſt be very ſenſible of; eſpecially if we conſider, that they likewiſe (I mean the Aſthmatick) breathe thicker, that is, every Expiration is performed in leſs Time: And if in half the Time (as is common by Obſervation) and the ſame Quantity of Air drawn in, then the Weight of the Air upon the Lungs muſt be 57648 Pound, of which a tenth Part is 5764 Pound: (I mean this Calculation for human Bodies.) And in ſuch Caſe, aſthmatick People, upon the greateſt Riſe or Fall of the Barometer, feel a Difference of the Air, equal to above one Third of its Preſſure in ordinary Breathing.

Laſtly, if the *Aſpera Arteria* or Wind-pipe is ſmall, and its Aperture or Orifice, at the Larynx or Top of it, of a narrow Conformation, the Preſſure of the Air increaſes in the ſame Proportion as, if the Times of Expiration were ſhorter; and upon this Account, a ſhrill Voice is always reckoned among the prognoſtick Signs of a Conſumption, becauſe that proceeds from the Narrowneſs of the Larynx or Orifice of the Wind-pipe; and conſequently increaſes the Preſſure of the Air upon the Lungs, which upon every Expiration, beats the Veſſels ſo thin, that at laſt they break; and in human Bodies, as a Spitting of Blood brings on a Conſumption apace, ſo in Horſes it is nearly the ſame: For I have ſeen ſuch thick winded Ones often troubled with Bleeding at the Noſtrils, *&c.* which moſtly terminated in the Glanders, and Death in the End.

A ſhrill Voice the Prognoſtick Sign of a Conſumption in Man.

I think

I think it is now high time to ask Pardon for these long, though necessary Digressions, and return to the Text, *viz.* of Surfeits in Horses.

I have hinted under the first Page of this Chapter, that Surfeits proceed mostly from foul Feeding, and undue Exercise, or from both: For as in such Cases, a Horse's Blood is either over-charged, or too much exhausted; the same Ills may, notwithstanding flow from it, *viz.* undue Secretions or Discharges, which when brought a little to Rights, and that the Blood partly recovers its proper Texture; I say, then it is, that Hemorrhages or Bleedings at the Mouth, Nose, *&c.* happen by a Distraction or Breaking of the small Fibres; or otherwise the Distemper appears in little Pustules, or knotty Tumours among the Hair, which are for the most part accompanied with Sweats: And if so, the Disease will soon be at its Crisis or Height: But if the Blood, by foul Feeding, has acquired a more than ordinary Viscidity or Clammines, it will be apt to stagnate or stop in some particular Parts, and cast off the Enemy in larger Tumours, such as Boils or Abscesses, which require Cutting open, and topical or outward Applications afterwards.

The Signs of a Surfeit.

Mr. *Gibson*, in his Book of Farriery, tells us a tedious Story about "the Excrement or Dung of Horses resting so long in the Guts, and thereby creating a more than ordinary Putrefaction; from which proceed acid and sharp Juices, which become a Stimulus to the Guts, and at last ends in a Looseness." And this Mr. *Gibson* imagines to be one Degree (or rather Symptom) of a Surfeit: But for my own Part, I cannot remember ever to have seen such a Case as this Author describes; nor indeed are Horses much afflicted with Loosenesses, because the prone or horizontal Posture this Creature's Body is form'd in, guards him (as much as may be) against such Discharges; and this is observable when we give a Horse purging Physick; for it is the Posture (before described) which makes the

Mr. *Gibson*'s Opinion of a Surfeit censured.

Medicine reſt ſo long as (moſtly) 24 Hours, before we obſerve any Appearance of its Operation.

In general, when a Farrier ſees a Horſe with a ſtarcing-Coat, and his Hide ſticking to his Rib, he immediately pronounces him to be a ſurfeited Horſe, although he conſiders not but ſuch Symptoms may proceed from want of good nouriſhing Food, and a proper Sufficiency of it. In fine, I think, under this Head ſhould not be ranked any other Diſtempers, which do not take their Riſe from foul Feeding, or over Exerciſing: For, from theſe, in my Opinion, moſt of the Ailments (which may be termed Surfeits) take their Origin or Source.

The Cure. In the firſt Place, if a Surfeit proceeds from foul Feeding, or over Feeding, and Want of ſufficient Exerciſe, moſt or all the Evacuations, ſuch as Bleeding, and likewiſe Purging both by Stool and Urine, are neceſſary.

A great Error in Feeding. But I have many Times obſerved, that People expect when their Horſes do little, they ſhould be fat and well-liking in the Stable, provided they have only Hay (and that indeed very often of the worſe Sort) given them; or that they require little or no Oats, *&c.* which is a great Error; for Hay in its Nature is ſo drying, that a Horſe muſt even ſwill to dilute, otherwiſe he cannot digeſt it; and this fills his Belly to ſuch a Degree, that the Diaphragm or Midriff is preſs'd upon the Lungs, which require Room to expand and ſtretch themſelves. I ſay, theſe with a great many more Inconveniencies proceed from feeding Horſes with too much Hay; ſo that I adviſe thoſe Gentlemen, who deſign to keep Horſes in this cheap Manner, rather not to keep any Horſes at all; ſince the Farrier and his Preſcriptions may amount to more than the Price of the Corn might have done, which would have kept the Creature briſk and lively, and fit to do Buſineſs. Whereas a Horſe that eats very little beſides Hay, yields very little more Benefit, than his Dung, to the Owner, and may truly be term'd a Conduit-

Pipe

Pipe from the Hay-Mow to the Hay-Meadow. Of ſo little Service is a Horſe for the Road.

I would be underſtood to ſpeak in general: For I own that ſome Horſes are of ſo fortunate a Make and Conſtitution, that they will look pretty ſleek and well, even with Hay alone, provided it be very good and ſweet, and given to them by a little at once, well ſhaked from Duſt, *&c.* But there are few Horſes of ſo hardy a Diſpoſition as to thrive well in the Houſe with Hay alone: And although moſt Dealers would have you believe, that they give their Horſes very little Corn; I could never yet meet with one (from their Hands) but required more than common Care, as well as a good Quantity of Oats, otherwiſe the Horſe would look much worſe in a very little while.

Secondly, a Surfeit may proceed from undue or too laborious Exerciſe, and catching Cold upon it. This very much endangers his Wind, as the Lungs are, from their ſoft Contexture or Make, exceedingly ſuſceptible of Impreſſions from Cold; which, in plain *Engliſh*, is the perſpirable Matter hindered from being diſcharged by the Pores in the Hide, which, on taking Cold, contract themſelves ſo cloſely, that ſuch Excrement (for, I can call it no other) is obliged to paſs along with the Blood in Circulation, and therein raiſes violent Commotions, and great Diſorders in the Lungs, Brain, *&c.* but moſtly in theſe two principal Parts of the Body, for the Reaſon juſt now aſſigned, *viz.* their ſoft Conſtructure, which ſooneſt takes the Impreſſion. In this Caſe Bleeding may be diſpenſed with; but, above all, keeping the Horſe's Body very warm all over with Blankets, or ſuch like, and bedding or littering him down with dry clean Straw, are the greateſt Preſervatives againſt Surfeiting upon hard Exerciſe; for Warmneſs of this Sort, forwards Perſpiration to a high Degree; and this is, in Reality taking away the Cauſe of the Diſorder, which is the true Way of curing Diſeaſes. And another

The Reaſon why the Lungs are ſooner affected with Colds than other Parts of the Body.

Thing may be ſaid in Favour of this Method, which is, that it aſſiſts Nature in opening the Paſſages ſhe deſigned, *viz.* the Pores of the Hide; and no Doubt but it will anſwer our End better than any other of the Emunctories or Out-lets, becauſe we forward the Exit of that Excrement, which Nature deſigned ſhould be thrown out this Way.

Nothing cold ſhould be given a Horſe to drink upon obſtructed Perſpiration.

Nothing cold ſhould be given a Horſe to drink upon his Perſpiration being obſtructed, or, in other Words, his having catched Cold; for ſuch Things are oppoſite to the main Intention of Cure, *viz.* promoting Perſpiration: Therefore give him Water Milk-warm for a few Days; and it will be much better if you mix a little Oat-meal with it, or rather if the Horſe will drink it) ſome of my Cordial Ball, as preſcribed in my Notes upon *Capt. Burdon's Pocket Farrier.*

Mr *Gibſon* directs *Sal Prunellæ* or purified Nitre, to be infuſed in the Water; and I cannot ſay but it may be ſerviceable, as it is a powerful Diuretic, or Promoter of Urine: But ſome Horſes are ſo nice, that they will refuſe ſuch medicated Water; tho' I fancy one might bring them to drink it, by keeping them from Liquids for ſome Time, and that may certainly be done (in the Caſes I am ſpeaking of) without the leaſt Danger or Hazard of hurting the Horſe by ſuch Abſtinence.

Mr. Gibſon's Opinion juſtified.

This Author farther very juſtly obſerves, that when Nature is put out of the Courſe ſhe deſigned to diſcharge or carry off any peccant or offending Humour; in ſuch Caſe there moſtly happens an imperfect Criſis, from which proceed the Mange, Farcin, Lameneſs, Blindneſs, *&c.* And that this is too often the Caſe, and wholly owing to the Doctor's Preſcriptions, which obſtructed Nature in her Deſign, is too evident to admit of a Diſpute: But ſuch there are, and ſuch there will be, while the World endures, whoſe pretended Learning is built upon ſo ſandy a Foundation, that it will not bear a Scrutiny: but, upon the Application of the Touch-

Stone

Stone of Natural or Experimental Philoſophy, their Writings will appear no better than meer metaphyſical Dreams, or philoſophical Romances of trifling Sages; ſuch as were the Works of the old Phyſical and Metaphyſical Philoſophers of *Greece*. And although the *Engliſh* Nation in particular ſeems to have a great Veneration for what is ancient, yet the ancient Phyſicians, and preſent Farriers, were much upon a Level as to Learning, provided we impartially examine the Writings of both. And I dare undertake to make this out plainly to the World, againſt all Favourers of *Hippocrates* or *Galen*, whenever I am put upon it by any Perſon worth my while to anſwer: That is, I will make it appear, that theſe ſo venerable Gentlemen, notwithſtanding the latter writ (or was ſaid to have writ) 200 Volumes, made full as many Blunders as our preſent Farriers, in the *Methodus Præſcribendi* or Manner of preſcribing: For both the ancient Phyſicians, as well as preſent Farriers, ſeem to pin their Faith more upon the Number of Ingredients jumbled into a Preſcription, than on any one as the Baſis, or to which the Cure is wholly owing. But to return.

Ancient Phyſicians and preſent Farriers, much upon a Level as to Learning.

If a Horſe has a ſtaring Coat, and is clung up in his Belly, boiled Barley is proper for him; as is alſo ſcalded Bran once a Day, with half an Ounce of Crude Antimony in fine Powder ſtrewed upon it, every Time you give it him; and after a Week's Uſe of theſe, you may purge him two or three Times at proper Intervals, according as you find he bears it: But if the firſt Purge don't operate, you are not (as the common Method is) to throw a ſecond Doſe into the Horſe; for many are killed by ſuch a Trick, though the Owner perhaps never hears the true Cauſe of his Horſe's Death. I ſay, it is a vulgar Error to imagine that a purging Medicine will do great Damage, provided it happens not to work much by Stool; for it may by Urine and Sweat, (which Courſe it generally takes, if it be not ſtrong enough to go off by Stool,) do more Ser-

Staring Coat or Hide-bound.

vice than if it had been made ſtronger; and that the greateſt Feats are performed by what we call Alteratives, or ſuch Medicines as have not any immediate ſenſible Operation, but gradually gain upon the Conſtitution, by changing the Humours from a State of Diſtemperature to Health. And it is now found very ſerviceable to give ſuch Medicines as are properly Cathartic, by way of Alteratives, in ſtubborn chronical Caſes. Thus the *Tinctura Sacra*, or Tincture of *Hiera Picra*, for Inſtance (in human Bodies,) given in the Quantity of half a Spoonful for a Doſe, has no immediate Effect upon the Inteſtines, ſo as to diſcharge their Contents, but paſſes on to the farther Stages of Circulation, and often does more Service by this Way of operating, than if adminiſtred in a larger Doſe. But moſt People are ſo deſirous to gratify the outward Senſes, that they are never eaſy, unleſs they ſee ſomething before their Eyes, which is ejected out of the Body, and appears excrementitious: Therefore, to ſuch impatient Creatures, Alterative Medicines are not agreeable; tho' People of this Temper often meet with their Deſert, and are made to believe that they Vomit yellow naſty Phlegm and ſlimy Matter, when it is only the Juices of the Stomach (tinged by the Medicine they have taken,) which are thrown up by Vomit. And, of all other Purgatives, I think the Gamboge-Pill beſt ſuits ſuch Folks; for this generally begins its Operation with a Puke of yellow ſlimy Matter, which the poor deluded Patients think muſt be exceeding beneficial to them, as it looks ſo yellow and naſty; whereas it is no other than the Gamboge which tinctures the Juices of the Stomach, and cauſes them to appear in the Manner I am ſpeaking of.

Great Feats performed by Alterative Medicines.

From hence it will be evident, that greater Service may be done in obſtinate chronic Caſes, by Alterative Medicines given to Horſes, than to Human Bodies; for we can venture on much larger Doſes, even in Proportion to the Bigneſs of theſe two Subjects,

jects, and the Diameter of their Veſſels; that is, a Cathartic or purging Medicine will operate in Man in a ſmaller Doſe, as the Subject is Man, ſo as to carry off the Excrements by Stool, than it will do in a Horſe, notwithſtanding the different Conſtitutions of theſe two Animals: For the prone Poſture of a Horſe guards him (as I have ſaid before) from Diſcharges by Stool as much as may be; and therefore Cathartics may be given in pretty high Doſes, which only (according to the Idioſyncraſy or peculiar Temperament of Horſes Bodies) operate as an Alterative. So that I adviſe never to toſs in one Purge upon another, when the firſt does not work, but let the Horſe alone a Week, and heighten the Doſe then, provided Purging be thought abſolutely neceſſary: But, no doubt, it is in Horſes as in Human Bodies, with Relation to this Particular; for really there are ſome, both Men and Horſes, that it is hazardous to give them ſuch a Doſe as will purge them to a common Degree: Therefore, when this ſo falls out, it is beſt to carry off the Cauſe of the Diſorder through ſome more proper Out let, which Nature is not ſo much bent againſt, as ſhe is to this particular Diſcharge by Stool.

Some Horſes, as well as Men, very hard to purge.

CHAP. IX.

Of Diſeaſes of the Head. And firſt, of the Head-Ach.

I Shall begin at the Head of this Animal, and proceed, in as regular a Method as I can, to deſcribe each and every Diſtemper affecting him, from thence to his Hoof, both inwardly and outwardly.

The Head-Ach.

I need not give a particular Deſcription of the Brain and its Meninges, with the Veins, Arteries, and Nerves ſpread upon it, this being pretty well

performed by *Andrew Snape*, who was Farrier to King *Charles* the First: But we are most beholden to the famous *Malphigi*, for a Description of this particular Part of the Body. This ingenious Person nicely examined what we call the Cortical Substance of the Brain, and discovered that it was nothing but a Heap of little Oval Glands that receive the Capillary Branches of the Veins and Arteries which belong to the Brain, and which send out an infinite Number of Fibres, that all together make up the Medullary Substance; which going out of the back Part of the Cranium or Scull, forms the Nerves and the *Medulla spinalis* or spinal Marrow, contained in the *Vertebræ* or Bones of the Back.

I say, a thorough Account of the Brain would be too tedious in this Place, and (unless the Reader understood Anatomy) the Description would be of no Service to him; for there is no such Thing as any Person's learning Anatomy by Theory only, which makes me avoid as much as possible any Thing of that Kind, which may be thought unnecessary. Yet I must not omit now and then to declare the admirable Mechanism and Contrivance of the Creator of the Universe, with relation to the Bodies of Animals. And as I remember, I have before hinted, that a Vein and an Artery go in Company all over the Body; only the Arteries are better guarded from Injuries by being placed deeper, or under the Veins, (so indeed they are, generally speaking;) but in entering the Scull, they spread themselves upon the Brain; and in this Place they differ, for mighty Reasons, *viz.* that had the Veins entered the Scull by the same Holes with the Arteries, it would have fallen out, that upon any Turgescence or Swelling of the Blood-Vessels, the Swelling and Pulse of the Arteries would compress the Veins against the bony Sides of their Passage, and so cause a Stagnation and Extravasation, or Loss of Blood with the Brain; which would soon be the Destruction of the whole Machine. Neither do

the

the Veins run along the Sides of the Arteries in the Brain, as they do through all the reſt of the Body, but they riſe from the Extremities of the Arteries in the Cineritious or Aſh-colour'd external Subſtance, and go ſtrait to diſcharge themſelves into the *Sinus's* of the *Dura Mater*.

Cineritious Subſtance, what.

From the Blood, which is brought to the Brain by the Carotidal and the Vertebral Arteries, is ſeparated (by the Glands which make the Cineritious and Cortical Subſtance) its fineſt Parts, called Animal Spirits, which are received from the Glands by the Fibres of the Medullary Subſtance, which is the Origin or Spring of all the Nerves in Men, Beaſts, *&c.* And each Nerve, therefore is a Bundle of very ſmall Tubes or Pipes, of which ſome are no bigger than the Hundreth Part of a Hair; and theſe Tubes are the Excretory Ducts or Diſcharging Veſſels of the Cineritious or Cortical Subſtance. And this does not only appear from the Structure of the Brain, but by Senſation likewiſe we are aſſured, that there is ſuch a Fluid as we call Animal Spirits in the Nerves; which muſt be done either by the Subſtance of the Nerve, or the Fluid which is contained in the Nerve. If by the Subſtance of the Nerve, it muſt be by a Vibration from the Part upon which the Impreſſion is made to the Brain.

No Vibration in the Nerves, from the Impreſſion of External Objects.

Now that there can be no Vibration from the Impreſſion of external Objects upon Animal Nerves, (which are ſlack, and ſurrounded all along by other Bodies) is evident; and therefore Senſation muſt be made by the Fluid in the Nerves. The Motion of this Fluid is not ſwift and rapid, as is generally ſuppoſed, but ſlow and languid; ſeeing all its Motion proceeds from the Dilatation of the Arteries which compreſs the ſoft Subſtance of the Nerves, and from the Force by which it is thruſt through the Glands of the Brain. And when the Nerves are full of this fine Fluid, the Impreſſions of Objects may be communicated to the Brain without any

quick

quick Motion in the Animal Spirits, either by retarding or ſtopping their progreſſive Motion, or by cauſing an Undulation. If to theſe be added, that the Animal Spirits muſt be confined within their own proper Channels, as well as the other Fluids of the Body, the many Hypotheſis contrived by Dr. *Willis* and others, muſt needs come to nothing.

Dr. *Willis*'s Hypotheſis cenſured.

The Nervous Fluid or Animal Spirits, undoubtedly, conſiſt of (by far) the ſmalleſt Particles in the Blood, as appears by the Minuteneſs or Smallneſs of their ſecerning or ſeparating Glands; and therefore, they not being formed by the Coheſion of other Particles, might have been ſeparated any where, or in any Part of the Body. Yet the Animal Oeconomy receives a great Advantage by the diſtant Station of the Brain from the Heart; for, if this had been placed nearer, and received the Blood, before divided into its ſmalleſt Particles by the Force of the Air in the Lungs, ſuch Particles might have enter'd the Glands, and afterwards cohering to one another, might have obſtructed ſuch extremely narrow Channels.

Now, the Brain being placed at ſuch a Diſtance, the Particles (that by their attractive Power form Corpuſcles) will have ſufficient Time to coaleſce or grow together, and their Magnitude will hinder their entering the Glands: For if it ſhould happen that theſe Particles ſhould enter the Glands, and there unite together, they would then obſtruct the Paſſage to the Nerves, and produce Apoplexies, Palſies, *&c.* the Particles of which the Animal Spirits conſiſt, being of ſuch an extreme Fineneſs, that their Quantity can bear but a ſmall Proportion to the other Fluids in the Blood, and conſequently there was a Neceſſity of a prodigious Number of Glands to ſeparate them from it; and this is the true Reaſon of the great Bulk of the Brain.

The true Reaſon of the Bulk of the Brain.

There is no manner of Doubt, but Horſes are ſubject to Nervous Diſorders, yet not, by far, ſo much

much as Mankind, which is chiefly owing to their ſimple plain Diet, adapted to their Nature, as well as the Exerciſe they are ſubjected to: Whereas we (poor unthinking Mortals) toſs ſuch a Number of Solids and Liquids into our Stomachs in ſmall ſpaces of Time, and that too often very oddly compounded with Spices, and other hot Ingredients; I ſay, this is, no doubt, one great Reaſon why Mankind, in this Age, complain more of Nervous Diſorders than their Forefathers, who made ſhorter and more ſimple Meals, and uſed more Exerciſe. But to return.

Signs of the Head-ach in Horſes.

The Signs of a common Head-ach, or a Head-ach in which there is not much Danger, are, firſt, Hanging down of the Ears more than ordinary, as alſo Drooping his Head, Dimneſs of Sight, and watery Eyes. But yet the Head-ach may proceed from Pains and Inflammations in the Globe or Ball of the Eye itſelf: So that it is very hard to diſtinguiſh in Brutes, whether the Head-ach is the Occaſion of Dimneſs of Sight, or the Diſorder of the Eye be the Occaſion of the Head-ach or Affection of the Brain. And I own I cannot eaſily make the Reader a Judge of this Matter; although I am pretty confident, that if I had a Horſe with bad Eyes, I could preſently tell whether it was an Affection of the Brain that occaſioned it, or that the Humours of the Eye were originally affected, ſo as to cauſe a Dimneſs of Sight. I ſay, I cannot make the Reader a Judge herein, becauſe there are a great many Caſes which appear plain to me at firſt View, and yet I cannot find Words fully to expreſs my Thoughts, which (I have the Vanity to think) is the true *je ne ſcai quoi*; and ſo let it paſs at preſent. However, I ſhall preſcribe ſomething that will do ſervice in moſt Head achs, and that is, firſt, Bleeding and Purging, according to a Horſe's Strength, Age, *&c.* Secondly, if the Diſorder does not yield to theſe, I recommend Rowelling in ſeveral Places at once; for one Rowel is of little Avail, for many Reaſons:

The Cure.

One Rowel avails little.

Reasons; and these should continue running a co
siderable Time, at least a Fortnight or three Week
An Excellent Powder for the Head-ach and distemper'd Eyes.
Lastly, the Herb *Afara Bacca* dried and powdere
and with a Quill, or such like, blown up the Hors
Nostrils, so that it may pass a good Way towar
his Brain: I say, this Powder, used in such a Ma
ner, will perform Wonders in Head-achs, Disten
per'd Eyes of most Kinds, and such like Disorde
of the Head; for it will abundantly purge th
Brain, by causing the Nose to run like a Tap.

It may be used three Times a Week, and abou
as much as will lie upon a Sixpence each Time
But the Horse's Head must be well covered, lea
he catch Cold, which will bring on a Swelling o
the Glands of the Throat, &c.

Most People are fond of purging their Horse
when they are distempered, whether the Case re
quire it or no; for this sort of Evacuation seems ver
much to quadrate with the outward Senses, an
makes the ignorant Part of Mankind (whose Head
are fuller of Humours than their Horses) imagin
that purging Medicines carry off the offending Mat
ter in most Disorders, never considering the genera
Rule which ought still to be kept in Mind, viz
A General Rule about Evacuations.
"that in Proportion to any one Evacuation's being
"heightened or increased, most or all of the othe
"Natural Evacutions are proportionally diminish
"ed." So that in the Main, it is by way of Re
vulsion such Business must be done, which the Vul
gar attribute to another Manner of Operation
Lord! How I could laugh when I see a silly stupid
Fellow, who thinks himself a Tip-Top Groom or
Farrier, poking and stirring about in a Horse T—d
to find Grease, &c. which his bright Notions tell
him he has by his Grand specifick Purge, or other
Medicine, fetch'd away from the Horse's Head or
Heels. Whereas this Grease observable in the
Dung of Animals, on such Occasions, comes from
no other Place than the Guts; which I shall evi-

dently

ently explain when I come to treat of the Diſtem-
er called the Greaſe in Horſes.

Laſtly, Rowelling may be of Service, as much
s any Thing, in obſtinate Chronick Caſes, where
ne Brain has for a long Time been affected: But it
not one ſingle Rowel which I adviſe, for that
ill only make an inſignificant Diſcharge, no more
Compariſon to the Quantity of Blood, and other
lumours in a Horſe's Body, than a Drop of Water
ompared to half a Pint. No, let me have five or
x Rowels in the moſt proper Parts, and continued
r ſome conſiderable Time, if the Horſe can bear
e Loſs of what is diſcharged by ſuch Methods,
d then indeed ſome Benefit may accrue from
em: Tho' this is no more than Revulſion, or
verting the offending Humours to ſome other Place
Expulſion; or rather, driving them into the
aſs of Blood, and equally mixing it. And that
ature is better able to deal with the offending Par-
les, when equally mixed with the Maſs of Blood,
an when ſuch Humours are lodged upon ſome
rticular Part, is every Day viſible. And it is
this Reaſon, *viz.* that where the Particles of
atter, which are of a Heterogeneous Nature,
d conſequently occaſion Diſeaſes, are equally
xed with the Maſs of Blood; (as indeed they
ſtly are in the Origin or Beginning of Diſtem-
s, 'till Nature ſuccumbs and is overpowered,
en they are thrown upon ſome particular Part of
Body, whereby the ſmall Capillary Veſſels are
ended, and form a Tumour, which at laſt ſup-
ates or breaks to let out the Enemy;) I ſay,
en they are ſo mixed, all the Emunctories or Se-
ory Glands, jointly and ſeverally lend a helping
nd, and each of them aſſiſt in carrying off a little
he offending Humour. But, on the contrary,
neſe offending Particles of Matter happen to
e or be driven upon any particular Part, the
nds are ſo ſtuffed, and their Excretory Veſſels
me ſo bruſhed up, that (as I juſt now obſerved)

a Tumour is formed; and laſtly, a Rupture
breaking of the Capillaries, in order to diſcharg
the peccant or offending Humour.

CHAP. X.

Of the Staggers.

FARRIERS, for the moſt Part, term all
moſt Diſorders which affect a Horſe's Hea
Stavers or Staggers; and this Diſorder in Huma
Bodies, is called an *Apoplexy*, or *Vertigo*; b
they are moſtly the ſame Thing, (only a Verti
is an eaſy Fit of an Apoplexy,) by Reaſon the ſe
ſame Organs are affected; and though the Verti
or Falling Sickneſs in Human Bodies, does not a
ways terminate in Death, yet ſtill it is a ſlight F
of an Apoplexy, which I ſhall define after the Ma
ner following.

Apoplexy defined.

The Word Apoplexy, is from the Gre
Ἀποπλήτ]ω, *percutio*, to ſtrike; becauſe a Cre
ture is as it were ſuddenly ſtruck with Death.
is a ſudden Depravation of all Internal and Extern
Senſation, and of all Motion, unleſs of the Hea
and Thorax. For the underſtanding of which,
is neceſſary to premiſe, *Firſt*, that if by any Mea
a Nerve is tied and compreſs'd, the Part to whi
that Nerve is directed, loſes its Senſe and Motio
Secondly, that if any Nerve is cut, there diſtils o
a Liquor. *Thirdly*, that Motion is performed.
Reaſon the Nervous Fluid is impelled by the For
of the Arterial Blood, through the Nerves into t
Muſcular Fibres. And *laſtly*, that Senſation is fr
hence, *viz.* that Objects compreſs or ſtrike up
the Extremities of the Nerves by their Motio
and drive back the Nervous Fluid towards t
Brain.

Apoplexy, its Courſe.

An Apoplexy, therefore, is produced by a
Cauſe which hinders ſuch Undulation or wave-li

Moti

Motion of all the Nerves unleſs of thoſe which are deſtined to move the Heart and Breaſt. But the Reaſon why the Motions of the Heart, and Thorax or Breaſt remain, and the Pulſe and Reſpiration continue, when the other Parts are deprived of Motion, is, becauſe in every Motion, which is performed by Muſcles having Antagoniſts or others of contrary Motions to themſelves, a Quantity of Nervous Fluid muſt be derived into the Contracting Muſcle, not only equal to that which is derived at the ſame Time into the Antagoniſt, but greater alſo. But leaſt I may not be underſtood by the Word Muſcle, I ſhall endeavour to explain this Anatomical Term as plainly as may be. And firſt I ſay,

A Muſcle, is a Bundle of thin and parallel Plates of fleſhy Threads or Fibres, incloſed by one common Membrane, and all the Fibres or Threads of the ſame Plate, are parallel to one another, and tied together at extremely little Diſtances, by ſhort and tranſverſe Fibres. Theſe fleſhy Fibres are compoſed of other ſmaller Fibres, incloſed likewiſe by a common Membrane or thin Skin: Each leſſer Fibre conſiſts of very ſmall Veſicles or Bladders, into which we ſuppoſe the Nerves, Veins, and Arteries to open; for, every Muſcle receives Branches of all thoſe Veſſels, which muſt be diſtributed to every Fibre. The two Ends of each Muſcle or the Extremities of the Fibres, are, in the Limbs of Animals, faſtened to two Bones, the one of which is moveable, the other fixed or immoveable: And therefore, when the Muſcles contract, they draw the moveable Bone according to the Direction of their Fibres. A Muſcle, what.

When the Muſcles contract in Length, they ſwell in Thickneſs, as may be perceived by laying the Finger upon the *Maſſeter* or Muſcle of the lower Jaw, and preſſing the Grinders or Axel-teeth together: But this Power of Contracting or Swelling is loſt, when either the Artery, or Nerve of the

the Muſcle is cut, tied, or otherwiſe obſtructed; as in the Caſe of a Palſy, &c. And therefore we conclude, that the Contraction, Swelling, or Motion of the Muſcles, is performed by the Blood and Animal Spirits, diſtending or ſtretching the Veſicles or Bladders, which are the Cavities of the Fibres: And this Diſtention of the Veſicles of the Fibres, muſt be, either by their being filled with a greater Quantity of Blood and Animal Spirits than they were before the Contraction, or the Blood and Spirits mixing, muſt rarify and fill up a greater Space.

Motion of the Muſcles how performed.

That the Veſicles of the Fibres are not diſtended, purely by the Quantity of Blood and Spirits, will appear if we conſider, that were the Veſicles diſtended only by the Quantity of Fluids contained in them, Nature (whoſe Operations are always the moſt ſimple) had only uſed one Fluid, and not two; for in the Works of Nature, we no where find two neceſſary Cauſes, where one could have produced the ſame Effect. Now how ſmall ſoever we ſuppoſe the Quantity of Fluid brought by the Nerves to the Muſcles, that alone might have contracted the Fibres, (if a Quantity of a Fluid only had been neceſſary) by diminiſhing the Diameters of the Cavities or Veſicles of the Fibres, as will appear plainly to any Perſon, who is curious enough to enquire into the Property of Elaſtic Fluids with relation to Muſcular Motion. Now to return.

I think I have already ſaid, that an Apoplexy proceeds from any Cauſe which hinders the Undulation of the Nerves, and that a Quantity of Nervous Fluid muſt be derived into a contracting Muſcle, not only equal to that which is derived at the ſame Time into the oppoſite Muſcle, but alſo greater: I ſay, this is plainly ſo, otherwiſe the Part to be moved would remain in an Equilibrium without any Motion at all: And therefore, more of the Nervous Fluid muſt paſs into a Muſcle, that has an Antagoniſt, than that which has none: But the

Heart

Heart is a Muſcle that has no Antagoniſt, and conſequently it requires a leſs Quantity of Nervous Fluid to continue its Motion, than other Muſcles deſtined for the Motion of the Limbs. Therefore, the Cauſe hindering the Undulation of all the Nerves were ſuch, that no Juice could flow thro' the Nerves, the Heart itſelf would ceaſe from Motion, and Death enſue: But if the Cauſe be not ſo powerful, as to take away all the Motion of the Fluid through the Nerves, but ſo far only relaxes their Dilatation, that but a very little Fluid can paſs through them, not ſufficient to inflate or blow up thoſe Muſcles which have Antagoniſts; I ſay, in this Caſe, thoſe Muſcles only will be contracted, which require the leaſt Quantity of Spirits, and ſuch no Doubt is the Heart.

The Impediment to ſuch due Undulation of the Nervous Fluid, is generally a Repletion or Overfulneſs, and this indicates Medicines which are called Evacuants, as alſo Bleeding, *&c.* And in my Opinion, Bleeding muſt be the premier Reſort, and is moſt likely to do Service in moſt Diſeaſes of the Brain: And this I am treating of, is a very common one in Horſes, as well as the Vertigo or Apoplexy in Man. The Cauſe and Cure.

The famous *Bartholine* calls the Internal Jugular Veins *Apoplecticæ*, from an Opinion of their being particularly concerned in that Diſtemper. But I am very well convinced, that there is little Difference whereſoever you bleed, either Man or Horſe: Since it is plain, that the Benefit which accrues to the Patient, proceeds from the Quantities being leſſened; and not ſo much from the fooliſhly ſuppoſed Conceit of Revulſion; which Term, as it is yet retained, I judge it may not be improper in this Place, to ſhew how far it may be of Uſe in Phlebotomy or Blood-letting. *Bartholine* calls the Internal Jugular Veins *Apoplecticæ*.

The Word Phlebotomy, derived from the *Greek* φλέψ, a Vein, and τέμνω, *ſeco*, to cut, ſignifies Blood-letting; and to give due Light into this Affair Phlebotomy explained.

Affair, which is of ſuch Importance in the Art
Healing, we are to remember, firſt, *that eve*
Body ſtriking againſt another, and communicati
Part of its Motion th reunto, loſes ſo much of
own Motion, or is ſo much retarded: Wherefo
the Blood thrown out of the Heart, while it ſtrik
upon the antecedent Blood, and drives it forward
tranſfers to it Part of its own Motion, or loſ
ſo much of it, as is required by the antec
dent Blood. Yet, in order to a thorough Knov
ledge of the Matter I am diſcourſing of, it is ab
ſolutely neceſſary a Man ſhould underſtand Angi
logy, or the Anatomy of the Veins and Arterie
However, I lay it down in general, as good Pra
tice, to bleed on the contrary Side to the Part a
fected; becauſe the remaining Blood will circula
faſter, and have more Room to do ſo, and thereb
the ſtagnating Blood (which occaſions a Tumour e
ther outwardly or inwardly) will in all Probabili
diſperſe. But on the other hand we muſt conſide
whether the Part affected be ſupplied with Bloo
from the aſcending or deſcending Trunk of the
orta or great Artery ariſing out of the Heart. Fo
ſuppoſe the Tumour or Swelling, which we wou
diſperſe by Bleeding, lies upon the Glands or Mu
cles of the Throat, we are not to bleed in the T
or Thigh Veins, thinking this the moſt likely, b
cauſe it is the common Method; no, the Parts
bove the Heart towards the Head, are fed and ſu
plid with Blood from the aſcending Trunk of t
large Artery; as thoſe below the Heart or towar
the Tail, are by the deſcending Trunk of the ſam
Therefore, if we bleed in the Thigh for a Swelli
in the Neck, we cauſe the Blood in the deſcendi
Trunk of the *Aorta* or great Artery to move fa
er, and of conſequence the Fluid in the aſcendi
Trunk, muſt move ſlower: For as much as that
Supply will be wanted in the Veſſel, which is ru
ning off its Contents; and therefore, the left Ve
tricle of the Heart, will not contain much me

Revulſion explained.

Bloo

ood, than what is required by the descending *Aor-*
, which spreads itself to the lower Limbs, *&c.*
nd that this must be the true Doctrine of Revul-
n, is plain from my Text, to wit, *That every*
dy striking against another, communicates Part of
s Motion thereunto, and consequently loses so much of
s own Motion. And under this View it may easily
: gathered what is to be done in every particular
ircumstance as to Blood-letting. For instance, if
e would prevent the Increase of any Humour from
ie Blood stagnating or stopping in the near Fore-
eg of a Horse, or bring it about that as little Blood
possible should flow to that Leg in any given Space
Time; I say, in this Case, Blood should be ta-
en from the opposite Side, because this is truly
aking what is called Revulsion. Again, if Blood be
rawn from the Side affected, and from some Vein
hich receives the Blood from a Branch of that
runk of the Artery, which transmits it to the
vell'd Part; this, I say, will cause a greater Deriva-
on or Flux of Blood to that Leg; which appears
lain from the foregoing Doctrine. And whosoever
ghtly understands thus much, will in every Exi-
ence easily manage this Part of Cure to the greatest
dvantage. And as for what relates to the whole
Iabit of Body or Mass of Blood in all Lentors and
Viscidities, as in the Case of the Farcin, and other
Distempers which proceed from a Slowness of the
lood's Circulation; I say, if there be a due
trength and Elasticity remaining in the Solids,
hlebotomy or Blood-letting will cause the remain-
ng Blood to circulate faster than it did before such
Operation, and it will also become thinner and
armer. I speak this with relation to a Lentor or
iscous Quality in the Blood, which is a Clog to its
Circulation. On the contrary, in a *Plethora* or Over-
lness of the Vessels, proceeding from a Horse's
eing kept too high, (as it is call'd,) and using
oo little Exercise, so that the Powers of the *Viscera*,
annot digest and secern what is received by the
Stomach

Stomach in such Loads: I say, in this Case, and where there happens to be a Diminution of Perspiration, where the Mass of Blood yet retains its natural Fluxility, Phlebotomy will render the remaining Blood into such a State, as that it will circulate slower, and become cooler. For in the first Case, a Diminution of the Resistance in the Blood-Vessels, will encrease the contractile Powers of those Vessels themselves, and consequently make them beat faster, and circulate their Contents with greater Velocity or Swiftness: But in the latter Case, a Diminution of the Quantity of a spirituous Blood, will lessen the Quantity of Spirit secreted or separated in the Brain; (which is the Fountain from which all the animal Spirits proceed;) and the Consequence of this Diminution will be, that the Heart and Arteries will not contract so often, nor so strongly as before, and therefore the Blood must move slower and become more cool. And on this depends the whole Doctrine of Blood-letting. Those who are yet more curious may consult *Bellini, de Missione Sanguinis.*

Notwithstanding what I have said about Revulsion, I think it a kind of splitting Hairs, when we make so great Distinction between taking Blood from the Side affected, or from the opposite; seeing Circulation is performed in so short a Space as five Minutes in a Man, and about an Hour's Time in a Horse: And our own Countryman, the famous *Sydenham*, who, I believe, cured as many Sick of a *Pleurisy* as any other Physician of his Time; I say this Gentleman (with good Reason) depended much upon Bleeding in this Disease, and orders Blood to be drawn from the affected Side, which shews he had some Thoughts of its being preferable, and that it would relieve the Patient sooner, than Bleeding in the contrary Side. The Doctor found his Account in it so far, that it did relieve the Sick, although I must own he did not proceed upon the true Doctrine of Revulsion, laid down as above.

Dr *Sydenham* famous for curing the Pleurisy, took Blood from the affected Side.

Therefore,

Therefore, I say, that the Difference is trifling, as to Bleeding in either Side; for the Benefit accrues from the Blood's Quantity being lessened, more than any thing else. And in my Opinion the Learned might employ their Time and Talents much better, than in Squabbling about such small Distinctions as they make with relation to Phlebotomy.

Before I quit this Subject, I must not omit one very good Observation made by Capt. *Burdon*, in his *Pocket Farrier*, about the Cause of the Staggers, and that is, "*Don't let your Horse stand too long* "*without Exercise, it fills his Belly too full of Meat* "*and his Veins too full of Blood; and from hence* "*(says he) the Staggers and many other Distempers* "*proceed.*"

Capt. *Burdon's* Origin of the Staggers, &c.

It is a very hard Matter for a Farrier to judge between a Fever in the Brain occasioning a Frenzy, and the Distemper (by them) term'd the *Stavers* or *Staggers*; for if a Horse hangs down his Head and Ears, and reels too and fro, they immediately pronounce him ill of the Staggers; whereas the same Symptoms happen upon a Frenzy, occasioned (as I have before hinted) from a Fever of the Brain. Therefore, the Motion of the Blood must be regarded; for if that be too quick, it indicates a Fever. But since it is plain, that a Fever of the Brain and the Staggers require much the same Method of Cure, I shall proceed to an Account of what's proper in such Distempers.

The like Symptoms attend a Frenzy of the Brain and the Staggers.

And *first*, I say Bleeding to the Tune of four or five Quarts (if the Horse be pretty strong) is most likely to do Service; for nothing is more certain than that *Diseases are cured by their Contraries*; and as the Staggers is a Distemper which mostly proceeds from an Overfulness of the Blood-Vessels in the Brain, there is no Dispute but all evacuating Medicines take place after Bleeding.

The Cure.

Origin of the Staggers.

Secondly, Purging may be of Service, as it helps forward the Discharge of a Load of Humours from the Guts and Glands thereabouts: But as to any

Purging proper, and why.

particular

particular kind of purging Medicines fondly imagined to carry off Humours from the Brain, it is all a Jeſt, and a meer Child of Ignorance, becauſe there is no ſuch thing as *elective Purgation*, as I hope may be underſtood from what I have ſaid in my Notes upon the *Gentleman's Pocket-Farrier*. Therefore, the Benefit accrues from this, to wit, that whatſoever Part of the Blood or Juices of the Body you take off by Bleeding, Rowelling, or ſuch like Operations, you thereby eaſe the Preſſure againſt the Sides, *&c.* of the containing Veſſels, and of conſequence there is a more free Circulation, by reaſon the Quantity of Fluid in the Body is leſſen'd, which (as I have ſaid before) cauſes the Blood to become thinner and move faſter.

No Elective Purgation.

From whence the Benefit of Bleeding, *&c.* accrues.

I ſhall not enter into a Detail of the Parts which we ſhould draw Blood from in Diſtempers of the Brain, ſeeing, in my Opinion, moſt Places are alike, and the Cure ſeems chiefly to depend on a proper Quantity of Blood's being taken away. But no Perſon can judge of this except he ſaw the Horſe; only thus far may be ſaid in general, "That where "one Creature dies of a diſtempered Brain from the "Loſs of too much Blood, there are twenty loſe "their Lives for want of taking away a ſufficient "Quantity.

I muſt here give Mr. *Gibſon* his juſt Praiſe, who in his Book of Farriery has taken care to order what is very proper in the Vertigo or Staggers, *viz.* his Aſſa Fœtida Balls with Caſtor: But as theſe would (if continued long in Uſe) ſoon exceed the Price of a good Horſe, I believe few will make Uſe of them; altho' I muſt needs own, if I valued my Horſe, I would give him Balls made with one Ounce of Native Cinnabar to half a Pound of the Cordial Ball preſcribed in the *Pocket-Farrier*, and let him have about the Bigneſs of a Wallnut of ſuch Ball every Morning before his moderate Exerciſe.

Mr. *Gibſon*'s Ball for the Staggers.

The Author's Ball for the Staggers.

It is on the Cinnabar (in whoſe Compoſition there is a deal of Quickſilver) that the Streſs of the

Cure

Cure is to be laid, and this, for Reaſons too long for me to explain in this Place.

Laſtly, I adviſe a ſtrong Decoction of Senna with ſome common Salt to be injected by way of Glyſter, with a very long Glyſter-pipe, *&c.* every Evening or Morning, and alſo the Herb called Aſara Bacca to be powdered, and with a long ſmall Tube or Pipe blown up the Horſe's Noſtrils to the Quantity of half an Egg-Shell full, which is about a Drachm in Weight. This ſhould be done every Evening to make the Noſe run a thin Lymph or watery Humour, which will eaſe the Head abundantly.

A Glyſter for the Staggers.

A Powder to be blown up the Noſtrils for the Staggers.

There are in Authors great Numbers of Receipts for the Cure of the Staggers, as well as moſt other Diſtempers: But, I muſt ingenuouſly confeſs, that my Faith is not pin'd upon the Number of Ingredients in any Compoſition, but rather upon ſuch Things as are particularly adapted to the Cure of the Diſeaſe, and for the Adminiſtration of which there is a *Why* and a *Wherefore*; for really there is no End of the Practice which is founded upon Noſtrums, ſeeing every one is bigotted to his own Receipt. Therefore it is well with us that the Art of Medicine is at this time (by the Helps which accrue from Mathematicks, Mechanicks, Chymiſtry, and Natural Philoſophy) brought to ſuch a Certainty, that all Family Receipts are thrown out of Doors, and ſufficiently exploded, as ſuperſtitiouſly and ridiculouſly contrived.

No end of the Practice founded upon *Noſtrums*.

Family Receipts exploded.

What I have ſaid with relation to Bleeding, Glyſtering, and the Sternutatory or Powder to blow up the Noſe, is, I think, ſufficient for the Cure of the Staggers, by reaſon it is granted, that ſuch Diſtemper proceeds from Over-fulneſs; therefore Evacuants are indicated, and theſe ſhould be mild and ſafe, not ſuch as enter the Blood and fuſe or heat it; but rather Glyſters, *&c.* which operate no farther than the *Primæ Viæ* or firſt Paſſages, *viz* the Stomach, Inteſtines, and their Appendices.

Evacuants proper in the Staggers.

Glyſter, how far it operates.

The Fol'y of putting Garlick, &c. into a Horſe's Ears.

Mr. *Gibſon*, in his Book of Farriery, tells us, that it is a common thing to put Garlick, Rice, *Aqua Vitæ*, Cloves, Ginger, Bay ſalt, and the like, into a Horſe's Ears, and ſtitch them up, for the Cure of the Staggers; and that he has ſeen ſome run mad by ſuch Applications, ſo that the People had much ado to keep them from knocking out their Brains againſt the Walls. I muſt confeſs, I do not remember to have ſeen any ſuch Tricks played for the Cure of the Staggers, tho' it is common amongſt Farriers to put Quickſilver, and often other Things, into the Ears, and ſew them up for ſome Time to cure the Farcin. And I knew one of the Letter Sort of Farriers, who had been long in *Flanders* among our Troops, where he chiefly gained his Experience, (as he called it) ſo fooliſhly fond of ſewing up Mercury or Quickſilver in the Ears of Horſes for the Cure of the Farcin, that he ſeldom made uſe of any other Method: And to my Knowledge he effected Cures by it when the Caſe ſeemed deſperate. And here I muſt relate one of the common Notions of this honeſt Fellow, whom I ſtill had a good Liking to, becauſe I now and then could drive ſome Reaſon into him, which he has publickly owned he found his Account in. This Farrier, you muſt know, was ſo bigotted to the Ears, as being the moſt proper Place to apply things to for the cure of the Farcin, that he told me he had often ſeen the *German* Farriers cure that Diſtemper, by whiſpering ſome *Abracadabra*'s into the Horſe's Ears, and giving him a Kick with their Foot, and turning him (as I remember) three times round afterwards: And this out-of the way Opinion my Old Friend retained even to his dying Day; and I could never make him believe an *Engliſhman* half ſo good as a *German* for curing the Farcin; notwithſtanding I have taken Pains to convince him that there is no greater Charm or Conjuration in the Number Three than there is in Number Four, or any other Number in Arithmetick, any farther than as it works upon the Imagination,

Mercury ſew'd up in the Ears ſuppoſed a Cure for the Farcin.

The *German* manner of curing the Farcin.

The abſurd Notion of the Number *Three*'s conducing to effect a Cure confuted.

nation, which I must own is in in many Cases surprising, where the Subject is a Human Creature. But in Brutes, I cannot see that the Imagination can operate, especially in this particular. But that this Faculty or Function is predominant in Brutes, as well as Human Creatures, is most certain, tho' not in so eminent a Degree, therefore no great Cures can be affected by it.

As to other Distempers of the Brain, such as Lethargy or Sleeping Evil, Falling Evil or Convulsions, Frenzy, and Madness in Horses, they are mostly treated as Apoplectick Disorders, to wit, by Bleeding and Evacuating Medicines, such as Purges, &c. And I believe Rowels may in these Cases prove of Service, provided there be made a sufficient Number of them, and those continued according to the Horse's Age, Strength, &c. But, as to the Parts of the Body, where such running Sores should be made, whether behind the Ears, in the Breast, or under the Horse's Belly, I think it is much the same thing; for the Cure consists in a regular and slow Emptying of the Vessels, or, in other Words, in draining off the Cause of the Distemper by other Out-lets, more than those provided by Nature. For in reality, making Rowels, Issues, &c. are no more than adding a Number of Anus's or Fundaments; so that she may meet with them in several Parts of the Body, and not be put to the trouble of going the more tedious and common Round of Circulation, in order for a discharge by Excrement or Dung.

Rowelling, its Use in curing Distempers of the Brain.

The Reason why Rowelling is useful.

CHAP. XI.

Of Diseases of the Eye, with an Account of its Parts.

IN this Chapter I hope to make the Reader understand thoroughly the Nature of a Horse's Eye, so that he will be able, not only to choose one

with good Eyes, but likewiſe be a Judge when theſe Horſes which have diſtemper'd Eyes are curable. But firſt, I think it abſolutely neceſſary, to give ſome Account of the Anatomy of this ſo admirably contrived Organ.

The Eyes by the Latins term'd *Oculi*, and why.

The Eyes are term'd in Latin *Occuli*, from the Word *Occludo* to ſhut, or from the Word *Occulo* to hide; becauſe they are hid by the ſhutting of the Eye-Lids. They are the Organs or Inſtruments of Sight, conſiſting of many Parts, to wit, of Humours, Membranes, *&c.*

Why the Eye is of a Globular Figure.

The Eye alone, when its Muſcles, the Optick Nerve, and Blood Veſſels are removed, is of a round or Globular Figure, both that it may move the better, and alſo that it may the better receive the viſible Rays.

The Eye-Lids, their Uſe.

The Eye-lids ſerve as Curtains to the Eye, by which Duſt, Flies, or any Thing elſe which might annoy them is kept out; nor do I think a farther Deſcription of them is neceſſary: ſo I ſhall proceed to the Eye itſelf, and deſcribe the Parts of which it conſiſts. And firſt, of its Tunicles or Coats.

The Eye deſcribed.

Its Coats.

1ſt. Adnata Tunica.

The firſt of theſe is called *Adnata*, from *ad* and *naſcor* to grow to; it is alſo called *Albuginea* and *Conjunctiva*. This makes the White of the Eye, and by it the Eye is kept firmly within its Socket; it is of exquiſite Senſe, and hath many ſmall Veins and Arteries, which are very diſcernable in an *Ophthalmia* or Inflammation of the Eye.

2d. Sclerotica.

The ſecond is called *Sclerotica*, from the Greek σκληρύνω, *induro*, to harden. This Coat appears plain, after the Removal of the former: It ariſes from the outermoſt Coat of the Optick Nerve, or in other Words, from the *Dura Mater*; it is opaque or dark behind, but tranſparent before, like a Piece of ſmooth Horn; from whence the third Coat has its Name, to wit, the *Cornea* or horny Coat, which is all that Part of the Eye, ſurrounded by the White of the Eye.

The

The third, is term'd the *Cornea* or horny Coat: It has a greater Convexity than the reſt of the Globe of the Eye, and is compoſed of ſeveral parallel *Laminæ*, which are nouriſhed by many Blood-Veſſels ſo exceeding fine, as not even to hinder the ſmalleſt Rays of Light from entering the Eye. And it has ſo exquiſite a Senſe, that, upon the leaſt Touch, the Tears might be ſqueezed out of the *Lachrymal Gland*, to waſh off any Filth, which by ſticking to the *Cornea*, might render it opaque and dark. 3d. Cornea. The Uſe of Tears.

The fourth, is called *Choroides*; it lies under the *Sclerotica*, and is much thinner than that. Anatomiſts think that this ariſes from the *Pia Mater* or thin Cob-web-covering of the Brain, which is expanded all along the Inſide of the Optick Nerve, and terminates in the *Choroides*. On the Inſide of this Membrane is a kind of blackiſh Subſtance, prepared by Nature, and ſpread over the back Part of the Eye. This Coat has a great Number of Blood-Veſſels, which comes from the ſecond called *Sclerotica*. The *Choroides* itſelf is of a whitiſh Colour, only the Glands thereabouts ſeparate ſuch blackiſh Matter as is before ſpoken of. Mr. *Snape* ſays, that ſuch Matter as is ſpread over the Inſide of this Membrane, is for the End that the Ideas received into the Eye might appear more illuſtrious; but this is a dark Saying, like many more Expreſſions made uſe of by thoſe who have treated upon the Subject of Farriery. 4th. Choroides. Its Colour. Mr. *Snape*'s Account of the blackiſh Matter ſpread upon the Choroides.

There is no Doubt, but ſuch blackiſh Glaze, or viſcous Liquor, is ſpread over the Inſide of this Membrane, to the End that the Rays of Light, which paſs from Objects into the Eye, may not be reflected back again, but (as it were) become thoroughly imbibed, and have a due Weight and Force upon the ſixth Coat called the *Retina*. The Author's Opinion concerning it.

The *Choroides* is open, or has a round Hole before (for the Paſſage of the Rays of Light, (called *Pupilla*; and by the common People, (though very abſurdly,) the Sight of the Eye. The Pupilla what. Abſurdly called the Sight of the Eye.

5th. The Uvea.

The *Uvea* is the fifth Coat, and makes the Circumference of the Hole I have been describing, which lies upon the Inside next the *Chrystalline Humour*. This Coat is made of both circular and straight Fibres or small Threads, which contract or dilate, according to the different Impressions of Light and Objects: For, if the Light be strong and glaring, these Fibres contract, and make the Hole called the Pupil (or Sight of the Eye) appear smaller. In like Manner, those Colours which make a strong Impression upon the *Retina*, oblige these Fibres to contract and draw the Hole into a lesser Compass; for the Contraction is involuntary, as well as the Dilatation or stretching out of the Pupil. And by these different Actions of the circular and straight Fibres of the *Uvea*, one may very easily judge of the rest of the Parts of the Eye: I mean, whether they be sound and perfect. For, the more the straight Fibres contract, when the Animal is in Darkness, or has a dark or opaque Body held before the Eye, by so much the more may we judge the rest of the Parts of this Organ to be in a sound and healthful State. The Contraction of the circular Fibres, upon the Admission of the Rays of Light into the Eye, and the quicker this Contraction is performed, the sounder and more healthful are the rest of the Coats and Humours. But a Person who is not well versed in Opticks, must look well, and near, to observe rightly the Contraction and Dilatation I am speaking of.

No Contraction or Dilatation of the Pupil in a Gutta Serena, and for what Reason.

In a *Gutta Serena*, the Pupil neither dilates nor contracts; because the Rays of Light which pass this Hole, and fall upon the Retina, do not in the least affect the Optick Nerve, which should convey the Image of the Object to the Brain. Therefore, in my Opinion, (notwithstanding what some late Pretenders may suggest to the World about their curing this Disorder of Sight) a *Gutta Serena* is incurable. And I dare venture to wager a Hundred Pounds with any Person, who pretends to perform this

this Operation with Succeſs, that he fails in the Attempt: But then I will not take his Judgment, but my own, whether the Diſtemper be a *Gutta Serena* or no: For I know very well this common Trick of Dr. *T——r*, *viz.* that he frequently calls a *Cataract* or *Glaucoma* by the Name of a *Gutta Serena*, when there are no better Judges than himſelf by; and therefore he is ſaid (by the ignorant By-ſtanders) to cure a *Gutta Serena*, when he has only done what many a one before him has, (without a Quarter of the Noiſe he makes,) *viz.* couched a *Cataract*. But this the Doctor thinks is too bald an Expreſſion; and notwithſtanding it is true, yet it ſeems Truth will not always take with the World if in a plain Dreſs. Therefore this Itinerant cunningly ſtiles ſuch Operation (different from our Forefathers) by his common Term of *Removing the Diſorders of Sight*, or *Depreſſing a Glaucoma*; for the Word *Cataract* would be too intelligible to the Country People, and would hinder the Doctor's Buſineſs.

Some Account of Dr. *T--r*, Oc-ſt to the *Q--n*.

I cannot part with this Fellow, who travels up and down the Kingdom, and pretends that he can perform ſuch Wonders in removing the Diſorders of Sight, when in Fact (for I have diſcourſed him over) he is ignorant of the very Fundamentals, *viz.* the Anatomy of the Eye: And, as to Viſion, he knows no more of it, nor of the Theory of Light and Colours, than the Creatures I am treating of in this Book. Indeed I muſt own, he can couch a Cataract and bruſh the White of the Eye (by the Latins called *Tunica Adnata*) with a Bruſh made of a few Rye or Barley-angs, (tied together in the Middle with a little Silk) when it is inflamed, and by this Means cut aſunder the ſmall Capillary Blood-Veſſels, which are full and turgid in an *Opthalmia* or Inflammation of the Eye, upon which the Eye looks much better and clearer: But then, all this while, ſuch Operation is no new Thing; for, it has been a Practice amongſt the *French* Surgeons,

eſpecially thoſe who mounted Benches, by their own Countrymen ſtiled *Medicins Hableurs*, which rendered into our Language ſignifies *Romancing Doctor*: I ſay, this, as well as a great many more whimſical and amuſing Performances, are ſhewn to the Populace, by the nimble-finger'd Gentleman I am ſpeaking of: And of this I have been an Eye-Witneſs twenty Years ago. But it is a delicious Bruſh to the Doctor, whatever it proves to his Patients; for, to my certain Knowledge, he laſt Summer brulhed an old cloſe-fiſted Clergyman out of 30 Guineas, and at laſt left him where the D—l left the Friar: But, ſo far I muſt tell the Doctor, he is ſafe from any Complaints from this Gentleman, becauſe he dare not ſqueak for fear of being laughed at by his Neighbours, for being ſo laviſh of his Money to a Perſon who travell'd with no other Credentials, than ſuch as (by the Diction and Style) appear to be of his own Compoſure

I am not at all ſurprized at ſome Letters of Recommendation this Perſon procures and carries from one Town to another, which Letters are moſtly from Phyſicians to their Brethren. I myſelf had two ſuch from very ingenious Men in other Reſpects; but then I muſt beg their Pardon if I differ from them in my Opinion of this empirical Pretender, who, in my Judgment, has got a Knack at nothing but getting Money, which may do well enough for a while: But ſo far I muſt venture to tell Fortunes, (notwithſtanding the late Act of Parliament againſt the common Retailers of Aſtral Influence,) that this Man, along with one more of the like Stamp, and a Female Bone-Setter; I ſay, theſe Three are of the Reptile kind, and therefore cannot endure long; but as they ſprang up haſtily, and are deſtitute of a good Foundation, it is certain they will in a few Moons totally diſappear, and vaniſh like a Dream, neither will they be any more heard of.

I beg the Reader's Pardon, for ſo long a Digreſſion, and I hope he will the more readily grant it, when

when I tell him that I did it to caution my Countrymen, as they value their Lives and Eye-Sight, never to employ an Oculiſt who travels about the Country ſounding his own Trumpet; for I never heard of, nor knew a clever Fellow of the Sort. And there are Inſtances enough, within the Memory of Man, to confirm what I ſay; and I fancy the Publick will be thoroughly convinced, what Sort of Men are fitteſt to be choſen as Operators to remove the Diſorders of Sight, when they read my Tranſlation of the Labours of the very Learned and truly Worthy Dr. *Antoine Maitrejan*, ſworn Surgeon of *Paris*, with my Annotations upon him; which I have ready for the Preſs, and deſign to publiſh the firſt Opportunity after I have finiſhed this Book. But to return.

The *Iris* is the Outſide of the *Uvea*, and is of different Colours. From the Inſide of the *Uvea*, which joins the *Choriodes*, riſes the *Ligamentum Ciliare*; it is made of ſhort Fibres which run upon the fore-part of the Glaſſy Humour (which I ſhall deſcribe hereafter,) to the Edges of the *Cryſtalline*: Theſe Lines are drawn from the Circumference to the Center, and by the Contraction of theſe Fibres the fore-part of the Eye is made more prominent or higher in the Middle, and the *Retina* or Net-like Membrane preſſed back farther from the *Cryſtalline Humour*, as the *Axis* of Viſion is lengthen'd when Objects are placed too near the Eye.

The Iris. The Uſe of the Ciliary Ligament.

The *Retina* is the ſixth Coat, ſo called from its reſembling a Net, which covereth the Bottom of the Cavity of the Eye. It is a fine Expanſion of the Medullary or Marrowy Fibres of the Optick Nerve upon the Surface of the Glaſſy Humour, as far as the *Ligamentum Ciliare*; and it is upon this Coat that the Impreſſion of Objects is made, and from thence by the Optick Nerve convey'd to the common Senſory.

Sixth, The Retina.

The Humours of the Eye are three: The firſt is called the *Aqueous* or Watery Humour, which is of a thin

The Humours of

the Eye described, and first the Aqueous or Watery Humour. Aqueous Humour of a Spirituous Nature. Observation on a Cock's Eye.

a thin Consistence and of a Spirituous Nature, for it will not congeal in the greatest Frost. And this evinces the Necessity of a continual Supply of this Humour, which it is manifest it hath; because if the *Cornea* or Horny Coat be prick'd, and this Humour squeezed out, it will be restored again in ten or twelve Hours Time. And I have often observed this in fighting Cocks, which after they received a Prick with the other's Spur thro' the horny Coat, the Eye would fall flat and hollow and be lost for the Battle; and altho' one would be hardly perswaded that such Cock would ever see of that Eye; yet it has the Morning following been full and plump again; and in two or three Days after very well and sound. But then I must observe, that when the Spur happens to penetrate so deep as to wound the Crystalline Humour, then, that Humour becomes heated and so altered as to hinder the Rays of Light from passing thro', sometimes appearing of a Pearl Colour, at other Times of the Colour of rusty Iron or Greenish; and in these Cases the Cock is said to have a Glass Eye, which is in Effect the same as to be blind of that Eye: For, altho' such Creatures, as Horses, *&c.* which have Glass-Eyes may distinguish Light from Darkness, yet they cannot distinguish Objects, so as to be of any real Service to them; and what is called by the Common People a Glass-Eye, is the Crystalline Humour altered from a Transparency to that Degree, that it will not suffer the Light to pass thro' it, and is in other Words a *Glaucoma* or *Cataract*; which Disorder I have heard the present Learned Oculist to Her Majesty affirm, he could either give to his Patients or cure them of it, as he thought fit; and that before he learnt this Art, he had blinded 500; which Relation I am the more induced to credit, since I have perused his late Book upon the Disorders of Sight, which I pronounce the most consummate and finish'd Piece of Nonsense and Jargon that ever I beheld: And really, I thought I should have split my Sides when

when I read it. But when I told the Doctor that he had puzzled me, he said he was glad on it, for he did not write in order to be understood, so that he had gained his Point. But for Fear of nauseating the Reader too much with dwelling upon this Man of Ability, I shall proceed.

The second Humour is the *Crystalline*. It lies immediately next to the *Aqueous*, behind the *Uvea*, opposite to the Pupil or Sight of the Eye, nearer to the Fore-part, than the Back-part of the Globe. It is the least of the Humours, but much more solid and firm than any of them. Its Figure, which is Convex or high in the Middle, and thinner at the Sides, resembles two unequal Segments of Spheres, of which the most Convex is on its Back-side, which makes a small Cavity or hollow Place in the Glassy or Vitreous Humour in which it lies. It is covered with a fine thin Coat called *Aranea* from its Resemblance to a Spider's Web; and this very Coat or Covering is adherent to the Glassy Humour all around the Edge of the Crystalline. 2d. The Crystalline.

Dr. *T*——*r*, Oculist to Her Majesty, has made a great deal of Do-about-nothing, in a Piece he has had the Assurance to publish to the World.

In this Learned Performance, the Doctor runs much upon the *Capsula* of the Crystalline Humour, by which he means a kind of Bag which covers the said Humour; and would have us believe, that he was the first Discoverer of such Capsula or little Bag, which he imagines he cuts in his Operation for a Cataract, and with his Needle turns the whole Body of the Crystalline through such Aperture or Opening. But sure, the Doctor is so far from having read the Authors he quotes upon the Subject, that he has neglected the Perusal even of some of our own Nation, particularly Dr. *Kennedy*: I say, if *T*——*r* the Oculist had perused this Author, or (if he could not understand him) have got some one to explain it to him, he would find that his *Capsula* of the Crystalline, is nothing more than

the *Tunica Aranea*, or Membrane that adheres to or is continued from, the Vitreous *Tunic* and *Ligamentum Ciliare*: And then, as to his turning the whole Body of the Cryſtalline out of its Place, I ſhall ſhew the Abſurdity of the Notion, after I have deſcribed the Parts of the Eye, and come to treat upon Viſion. But to return.

The Subſtance of the Cryſtalline Humour is commonly taken for a congeal'd or frozen Sort of Body, as the Vitreous has likewiſe been: But this Opinion, no doubt, has proceeded from a very ſlight Examination, or rather no Examination at all; ſince few are ſo ignorant as not to have ſeen a Fiſh's Eye boiled, or even any other Creatures, the Cryſtalline of which becomes White, and turns off in many different *Laminæ* or Coats, like unto the Coats of an Onion. And becauſe the Q——'s Oculiſt would have us believe, that he firſt diſcovered the *Capſula* of the Cryſtalline, I beg the Reader's Leave to tranſcribe the Words of Dr. *Kennedy*, in his Book publiſhed in the Year 1713, which I believe will be found to be ſome Years before *T—r* was a Practiſer: The Words are theſe, *viz.* ſpeaking of the Cryſtalline Humour, he ſays, "That it lies in a "perfect Sort of *Sacculus*, that is, its *Tunica Aranea* being continued from the Vitreous *Tunic* "and *Ligamentum Ciliare*, comes cloſely round it, "ſo that it lies very fixed and faſt; but if you cut "its *Tunic* or Coat on the Top or Side, it immediately ſprings out, ſo that ſeems not to be any "ways adherent to its Membranes."

Thus far Dr. *Kennedy*, whoſe *Sacculus* for the Cryſtalline, I think every whit as pertinent as *T——r*'s *Capſula*: Although I muſt own, Dr. *Kennedy* is miſtaken in one particular, *viz.* where he ſays, that if you cut the *Tunica Aranea*, (or which is all one, *T——r*'s *Capſula*,) the Cryſtalline will immediately ſpring out; I ſay, that Mr. *Kennedy* is moſt certainly wrong in this, becauſe we never couch a *Cataract*, but we cut this *Capſula* or thin Membrane,

Membrane, and turn off very often one or more of the *Laminæ* of the Cryſtalline Humour; nay I have great Reaſon to believe, that ſome *Cataracts* are no more than the *Capſula* of the Cryſtalline grown dark or opaque: for upon the leaſt Touch with my Needle (I mean a flat two-edged Needle) the Fibres of the *Capſula* being a little divided, immediately contracted themſelves, and left the whole Body of the Cryſtalline clear and tranſparent; and I was ſatisfied, it could not be the Cryſtalline that I touched with my Needle, becauſe I did it ſo ſlightly that I ſcarcely cut the *Capſula*.

I ſay, the *Laminæ* of the Cryſtalline Humour, in the Diſeaſe called a Cataract, are ſo altered as not to ſuffer the Rays of Light to paſs through them; and when theſe Laminæ, I mean the opaque Strata or Lays of the Cryſtalline, are thus ſcraped off with the Needle, it is then the remaining Part of that Humour ſuffers the Rays of Light to paſs thro', although, indeed, they often fall in a confuſed Manner upon the Retina; and therefore it is abſolutely neceſſary to ſupply the Defect of the Cryſtalline, which from being convex, is, by the Needle in couching, made almoſt of a Plane Surface; I ſay, this Defect is beſt ſupplied by a Lens or Convex Glaſs. And for farther Proof that this is the real Caſe of a Cataract, and that the Cryſtalline is in Fact the true *Lens* of the Eye, it may be obſerved, that thoſe Perſons who have had their Eyes couched, are obliged to uſe Glaſſes of a greater Convexity, than others who are above a hundred Years of Age: And this, becauſe the Convexity of one Side of the Cryſtalline is ſcraped off in the Operation of Couching. But it is Folly and Madneſs to imagine, with T——r the Oculiſt, that the Cryſtalline Humour is quite turn'd out of the Cavity it makes in the Vitreous, in ſuch Operation; and that the Vitreous Humour becomes convex in its Place. I ſay, this is (for Reaſons too plain to be inſiſted on) talking more like a quacking empirical Fellow, that one

verſed

verſed in Opticks. I ſhall now proceed to a Deſcription of the third Humour.

The 3d Humour. The third is called the *Vitreous* or Glaſſy Humour. It takes up the greateſt Part of the Eye, filling all the hind part of the Globe. It is Spherical behind and in its Middle; before, it is concave or hollow, and in the Cavity the Cryſtalline Humour lies.

The Vitreous Humour deſcribed. The Vitreous is a very tranſparent Subſtance, not ſo hard as the Cryſtalline, or ſo fluid as the Aqueous or Watery Humour; and it ſeems to be nothing elſe but a Number of delicate little Veſicles or Bladders full of Water; for in touching, it is always moiſt and wateriſh, and when cut, the Mixture flows out more abundantly; or by rubbing it betwixt the Palms of one's Hands, the Water comes out, and to ſuch a Degree, that it will appear nothing but a Membrane or thin Skin; and by obſerving with a Microſcope or Glaſs commonly called a Magnifying Glaſs, when it is cut, you will obſerve many little Airy Bubbles to ariſe from it, but being dried, it evaporates or flies away, and this delicate membranous Body ſeems almoſt withered to nothing.

The Uſe of the Vitreous Humour. The Uſe of the Vitreous or Glaſſy Humour ſeems chiefly deſigned to keep the Cryſtalline at a proper Diſtance from the Retina, as I ſhall farther explain in ſpeaking of Viſion: For I hope the Reader will pardon my Prolixity, with relation to a Diſcourſe of that ſo admirably contrived Organ the Eye, ſeeing ſo many People are cheated with Horſes that have bad ones, nay ſometimes with ſuch as are ſtone Blind. Therefore, I ſay, if the Reader will only ſtudy over this Chapter a little, he may moſt certainly judge of the Soundneſs of a Horſe's Eyes; and thereby ſhun the Loſs which accrues upon buying a blind Horſe, as well as the Cenſure of his Neighbours, for his Ignorance in that Particular. Now to return.

The Vitreous or Glaſſy Humour has a very fine nd thin Membrane or Coat with which it is co- ered. This Membrane is adherent or joining to he *Ligamentum Ciliare*, and no doubt has its Blood- eſſels (as well as all the other Membranes of the ody, which muſt be nouriſhed by Blood-Veſſels,) rom thence, although ſo fine and ſmall that they re not to be ſeen even with a Microſcope. Yet his need not ſeem ſtrange when we conſider that hoſe of the *Cornea*, which, though they are much rger, are not to be ſeen, till they become turgid r ſwell in an *Ophthalmia* or Inflammation of the ye; or even thoſe of the *Tunica ardnata* or white f the Eye; till inflamed, as I have ſaid. Now whether there is any Communication between the itreous Humour and the Cryſtalline, is what Ana- omiſts cannot determine: But this is plain, to wit, hat its Membrane or Coat is not only continued or dherent to the *Ligamentum Ciliare*, but likewiſe o the *Tunica Aranea* or Membrane which imme- iately covers the Cryſtalline Humour, which *Tuni- a Aranea* is the *Capſula* of the Cryſtalline lately iſcovered by Dr. *T——r*, as I have juſt before inted.

The Optick Nerves pierce the Globe of the Eye, little on the Inſide of the Optick Axes. Their xternal Coat, which is a Production of the *Dura later*, is continued to the *Sclerotis* or that Part f the Eye next under the White; as their Inter- al from the *Pia Mater* is to the *Chorcides*, which the Coat next under the *Sclerotica*, and their Me- ullary Fibres paſſing through all, are expanded in- the Retina, upon which the Images of Objects e painted. The Center of this Expanſion is in- nſible, and all Rays which fall upon it are loſt, nd conſequently that Point of the Object from hich theſe Rays come is inviſible to the Eye: he Reaſon of which proceeds probably from the ood-Veſſels, which enter with the Optick Nerve, d cover this part of the Retina. But, whatever

The optick Nerves.

The Origin and Termination of their Coats.

Center of the Retina inſenſible.

The Reaſon aſſigned.

its

its Cauſe is, there is a manifeſt Advantage in the Optick Nerves being inſerted on the Inſide of the Optick Axes; for if they had pierced the Eye, then the middle Point of every Object had been inviſible. And where all Things conduce to make us ſee beſt, there we had not ſeen at all. We muſt likewiſe have loſt ſome Part of an Object, if the Optick Nerves had been placed on the Outſide of the Optick *Axes*; becauſe an Object may be ſo placed as that all the Rays which come from one Point, may fall upon the Outſide of both Eyes; but it is impoſſible they ſhould fall upon the Inſide of both Eyes; and therefore that Point which is loſt in one Eye is viſible by the other.

The Advantage of the Optick Nerve being inſerted on the Inſide of the Optick Axes.

All the Rays of Light which come from one Point of an Object, are by the *Cornea* and Humours of the Eye united in a Point of the Retina, which is in a ſtraight Line drawn from the ſame Point of the Object through the Center of the Eye, and conſequently all the Rays which come from all the Points of an Object are united on the Retina in the ſame Order and Proportion as the Points of the Object are from whence thoſe Rays come. Therefore the Interpoſition which theſe Rays make upon the Retina muſt be the Image of the Object: and thus Viſion in general is performed. But to know what the ſeveral and diſtinct Parts of the Globe of the Eye contribute hereunto, it is needful to obſerve, that the Cornea is more Convex than any other Part of the Eye, by which Means all the Rays are gathered, ſo that they may paſs through the Pupil or Sight of the Eye, and none of them be loſt upon the Uvea.

How Viſion is performed.

The Aqueous Humour being thinneſt and moſt liquid eaſily changes its Figure, when either the *Ligamentum Ciliare* contracts, or both the oblique Muſcles ſqueeze the Middle of the Bulb of the Eye to render it oblong, when Objects are too near us. The ſtraight Fibres of the Uvea dilate the *Pupilla* or Sight of the Eye, as it is commonly

The Reaſon of the Contraction and Dilatation of the Pupil.

called

lled, when there are but few Rays of Light; and e Circular Fibres contract it when there are too any; as may moſt eaſily be obſerved in a Cat's ye when ſhe ſits in the Sun-ſhine, how narrow d ſmall the Pupil or Sight of her Eye will ap- ar to what it is when ſhe is in the Shade.

Obſervation on that of a Cat's Eye.

When the Pupil or Sight of the Eye is contracted e ſee moſt diſtinctly; when it is dilated we ſee oſt clearly.

The Glaſſy Humour keeps the Cryſtalline at ch a Diſtance from the Retina, as is neceſſary for iiting the Rays which come from one Point of the bject, exactly in one Point of the Retina.

The Choroides is tinctured black, that the Rays Light which paſs through the Retina may not reflected back again, and thereby confuſe the nage of the Object; for black imbibes or (as it ere) ſucks up the Rays, and therefore it is the otteſt Colour a Man can wear in Summer.

The Choroides black and why. Black the hotteſt Colour for Summer wear.

Thus have I given a ſuccinct or ſhort Deſcrip- on of this admirably contrived Organ; and what ſhall treat of next is the Theory of Viſion, herein I ſhall ſhew how, and after what Manner, e Images of Objects are repreſented to the Eye, Means of the aforeſaid Organs of Sight.

CHAP. XII.

ecory of Viſion conſidered, with ſome of the Diſeaſes of the Eye.

T is not my Deſign at preſent to write a diſtinct Treatiſe upon Opticks, but only to ſhew the eader ſo much as is neceſſary how Sight is per- rmed, and by that Means he will be able to judge tter, perhaps, than he could do before, of the undneſs of a Horſe's Eyes.

Light

Light a subtil Fluid.

Light, or what I meant by Rays of Light, are no doubt a subtil Fluid that moves quick, and is continually emitted from the Sun or Luminous Body. Its Motion may be observed by the Reflection of Solid Bodies, and the Refraction it has in passing through dense Mediums, such as Glass, *&c.*

Motion of Light quicker than that of Sounds.

I might here enter into a Philosophical Account of Light, and shew how much quicker its Motion is than that of Sounds, which is the second in quickness to Light; and that this Body, for such it is, though of extremely small Particles, according to the Demonstration of Mr. *Romer*, from the Eclipses of *Jupiter*'s *Satellites*, finishes its Progress from the Sun to this Earth, in about ten Minutes of Time; and moves a Million of Times quicker than a Cannon-bullet, shot from the Mouth of a Cannon. For, as the first comes to us from the Sun in ten Minutes, the latter would be 25 Years in finishing the same Course, though it should fly with the same Celerity as at first; and yet the Sound of the same Cannon, would be here in a little more than half that Space of Time. And the Reason why a Bird does not fly away, and escape being killed by the Fowler, when Light and Sound are so much quicker than the Ball or Hail-shot, is, because the Distance between the Fowler and the Bird is so small, that the Difference is scarcely distinguishable, except by a Person who is a good judge of these Things; for the Motion of all the Three is exceeding quick.

In what Space of Time Light finishes its Course, from the Sun to this Earth.

What Bodies by Agitation emit Light

All Bodies abounding with earthy Particles, and especially if they are sulphurous, and their Parts sufficiently agitated, do emit Light, whatsoever way such Agitation is brought about. Thus Sea-Water shines in a Storm; Quicksilver when shaked in Vacuo; Cats or Horses when rubbed in the Dark; and Wood, Fish, or Flesh, when putrefied.

Light, what it is.

Light then is that *Materia Subtilis*, sent forth from the Sun or Luminous Body in Lines or Rays, commonly called Sun-beams; and these coming with such incredible Swiftness, and meeting the Eye, properly

coperly and wonderfully disposed, with *Convex* and *Diaphonous* Mediums the better to receive such Rays, cannot but strike very sensibly upon the fine Medullary Fibres of the *Retina*; but whether it be communicated to the Soul by Undulation or Vibration, what I shall not pretend to determine.

Camera Obscura described.

The Eye may be considered as a *Camera Obscura* or dark Chamber, to make which, shut the Doors and Window-shutters of a Room very tight and close, so as no Light be admitted to come in but by a small Hole in one of the Shutters: Then place a sheet of white-Paper, which may be supposed to represent the Retina in the Eye: I say, place this at a convenient Distance from the Hole, and the Rays reflected from Objects without or in the street, will cross one another in the Hole, and paint the Image inverted or topsyturvy on the Paper, though but faintly.

Vision performed without the Crystalline or other Humours.

Thus it would do upon the Retina, although there were no Humours in the Eye, neither *Crystalline*, *Vitreous*, nor *Aqueous*, no nor even the *Cornea* or horny Coat, provided there was only a small Hole, such as the Pupil, for the Rays to pass through, as in the *Camera Obscura*; so that it is possible for a Creature to see without the help of the Crystalline Humour; and perhaps this may have made Dr. *T——r* imagine, that he turns the whole Body of the Crystalline Humour out of its Place, when he couches a Cataract. But he must be only a Smatterer in Opticks that knows not thus far, to know, that if the Crystalline Humour were totally removed out of its Place, the Images of Objects would be so faintly painted upon the Retina, that a Person might be near as well as blind. So that all the Parts of the Eye (as I shall shew hereafter) contribute to the greater Perfection of Sight.

The Rays of Light converged by the Crystalline Humour.

For Example, a *Lens* or Spectacle Glass, we may suppose to be the Crystalline Humour behind the Pupil or Sight of the Eye; I say such Glass being placed betwixt the Hole and the Paper, will make

the Rays converge or come to a proper *Focus* or Point, though they were before ſpread in a large and confuſed manner; that is, the oblique Rays of each Pencil of Rays, that flows from every Point of the Object, will be refracted by the Denſity of the Glaſs Medium to their proper Perpendicular, and there meeting much nearer to one another in the Focus, than at their Place of Incidence, muſt conſequently imprint the Image much more ſtrongly and perfectly delineated.

If the *Lens* or Cryſtalline Humour be too far from the Paper or *Retina*, the Rays will interſect or croſs one another before they arrive there, and afterwards become divergent or diſperſed upon the Paper; ſo that by this Means they are again ſpread, and make a confuſed or faint Image or Impreſſion of the Object. If it be held too near, I mean, if the *Lens* or Convex Glaſs be held too near the Paper, the Rays are not as yet met in their *Focus*, and therefore cannot be ſo perfect. Thus the Paper of *Retina* muſt be at a proper Diſtance.

Near-ſightedneſs accounted for.

The Reaſon commonly aſſigned for the Diſorder of Sight called *Myopia*, Mouſe-ey'd or Purblind, is this, to wit, from too great a Convexity or Protuberancy of the *Cornea* and Globe of the Eye, which is very remarkable in Creatures near-ſighted. There is no cure for this Diſorder in Horſes, but Men are help'd by the Uſe of Concave Spectacles or Meniſcous Glaſſes, or ſuch Glaſſes as are Convex on one Side and Concave on the other, or theſe call'd *Concavo-convex* Glaſſes, which make the Rays diverge or go farther aſunder, that otherwiſe would be too near or Convergent, by the too great Convexity of the *Cornea*, *&c.*

Presbytia, what.

Presbytia, from πρέσβυς, *Senex*, old, is a Diſtemper juſt oppoſite to the former; and is when the Cornea, *&c.* are not ſo Convex, as they were in Youth: For, as any Creature advances in Years, the Eye grows more plain and flat, for want of that Vigour in the Blood's Impulſe, which was wont to keep

In old Horſes, the Cornea not ſo Convex.

:ep the Globe turgid and full. I ſay, the *Cornea* as in young
old Age becomes flatter or leſs Convex, and this ones.
to be helped by the Uſe of Convex Spectacles on-
; and theſe are to be fitted according to the Decay
the Eye, or Flatneſs of the *Cornea*; for I do not
low that ſo much depends upon the other Parts of
ie Eye, as on the Cryſtalline Humour's growing
lainer and of a leſſer Sphere, according as a Perſon
ivances in Years; no, I am well ſatisfied that the
ornea or horny Coat (which is the outermoſt Part
f the Eye before) is moſtly the Cauſe of Dimneſs
f Sight, and no doubt but it is the ſame in Horſes:
or in them I have obſerved the *Cornea* become
ore flat or leſs Convex as they grew old; but this
reature is not ſo ſubject to the Infirmity I am now
eating of as Man, by reaſon they do not live to
alf the Age. And though it may be ſaid in gene-
al, that a Horſe is as old at Seven, as a Man is at
orty, yet his Eyes, (if he is well kept) may conti-
ue full, and the Cornea be kept prominent till he
Sixteen, or even Twenty Years of Age. Beſides,
Mankind are ſo careleſs of this ineſtimable Bleſſing,
at they little regard the Value of it, till it is often
o late; for they do their Eyes a vaſt deal of Da-
age by ſitting near and facing hot glaring Fires,
nſomuch, that they, in ſome Meaſure, parboil the
Cryſtalline Humour in particular, as well as do
lurt to the reſt of the Parts within the Globe of the
ye. But as the Cryſtalline Humour is (as I have
id before) of the moſt ſolid Conſiſtence of any of
ie three Humours of the Eye; therefore leſs Heat
neceſſary to make it of ſuch a Nature, as that the
ays of Light cannot paſs through it, ſo as to make
iſion diſtinct. And in ſuch Caſe, the outermoſt
amina or Covering muſt be turned off by a Needle,
in the Operation for the *Glaucoma* or Cataract.

Cauſe of Dimneſs of Sight.

Why old Horſes ſee worſe than young ones.

Fire pernicious to the Eyes.

Another Thing is Candle-Light, and of this Peo- Candle-
e generally ſuffer themſelves to have too much Light,
hen there is little Occaſion for it. And by how Reading by
uch the more we accuſtom ourſelves to it, or it bad for the Eye,

read

read by great Lights, by ſo much the more we ar hazarding our Eye-Sight; and we may thereb bring it into ſuch a State that we cannot ſee at all when others of the ſame Age, who do not hur themſelves by what I am ſpeaking of, can rea diſtinctly. Furthermore, People ſhould turn thei Backs upon the Light when they would read, or d any Thing that is term'd fine Work; but inſtead o this they turn their Faces directly towards the Light which is diametrically contradictory to all the known Rules in Opticks.

Why a Horſe ſees better in the Night than Man.

There it not any Thing in the Compoſition of a Horſe's Eye, which ſhould cauſe him to ſee better than a Man can do, in the Night-time; for it is only his being kept more in Darkneſs than we are, which makes a leſs Light ſerve his Turn. So that as to Light or Darkneſs we talk of them as we do of Heat or Cold, to wit, as they affect ourſelves, not others: For Example, what's Hot or Cold to me may not be ſo to another, and when it is dark with us, it may not be ſo with others, altho' in the ſame Climate.

Why Cats, *&c.* can ſee better than Men in the Night.

As to a Cat or Owl's ſeeing better than other Creatures in the Night, there cannot be any more ſaid in the Caſe than this, to wit, that thoſe Creatures have their Eyes of a finer Contexture or Make, and that therefore the Nerves are ſooner affected. Add to this, the Inſide of the *Tunica Sclerotica* of theſe Creatures is more black than others, and by that Means the Rays of Light are more imbibed, and conſequently a ſtronger Impreſſion made upon the Optick Nerve. And whoever pretends to give any other Account than this, it muſt be ſuch as is meerly ſpeculative and conjectural. But to return:

The *Lens* which repreſents the Cryſtalline Humour, is to be placed at its proper Diſtance from the Paper behind the Hole in the *Camera Obſcura* or dark Chamber; by which Means the Rays of Light are broke or refracted: But whether by a proper Diſpoſition of the Pores of the Glaſs or Medium,

am, that breaks the Rays, in like Manner as a
ll is thrown into a Tube; or whether, according
the incomparable Sir *Isaac Newton*, the ſame is
rformed by Attraction, I ſhall not at preſent take
on me to determine: But that the Rays are broke
refracted, few or none will deny, ſince it is de-
onſtrable by ſeveral Experiments in Opticks.

Theſe Rays being brought then by Means of the
nvex Glaſs or Lens to their proper *Focus* or Point
Convergence upon the Paper, muſt (as I have
d) imprint a more perfect Image.

A Convex Glaſs compared to the Cornea.

A *Convex* Glaſs of a larger Sphere, which Glaſs
ay be compared to the Cornea, as the other was
the Cryſtalline; I ſay, a Glaſs of this Sort being
t a little on the Outſide of the Hole, will make
greater Number of Rays to converge or come to
Point from all Parts of the external Object, and
enter in at the Hole upon the Lens or Convex
laſs on the Inſide, and conſequently make the
ture or Image ſtill more perfect.

The greater the Convexity of the Cornea the larger the Object appears.

The greater the Convexity of the *Lens*, the larger
e Object will appear; for the Angle of Viſion
ll be greater, but the Axis of Sight or Diſtance
m the Object will be ſhortened; ſo that Creatures
ich have their Eyes more Convex than ordinary,
ſuch as are Purblind, if they have no other De-
t or Weakneſs but what proceeds from ſuch Con-
xity, ſee Things better, and larger than others;
this muſt be ſuppoſed at their own Diſtance,
ich no doubt muſt be nearer according as the
e is more Convex.

Purblind Horſes ſee better as they grow old.

There is no Help for this Defect in Horſes, I
an the too great Convexity of the *Cornea*; but
s I can ſay with Truth, ſuch Horſes will have a
re perfect Sight, or ſee Things at more proper
ſtances when they grow older; for by that Time
Cornea will become flatter and more plain, and
Rays from Objects at common Diſtances will
fall ſo divergent upon the *Retina* as they did
ore.

I muſt

A Horſe ſhould not be rid on a dark Night out of a light Stable.

I muſt not quit this Subject without acquaintin the Reader, that if he be obliged to ride in a d Night, nothing can be worſe than mounting h Horſe out of a Stable where there are Candles burn ing; and it is the ſame with thoſe Horſes, whic (to the Shame of their Maſters be it ſpoken) a often hung or tied at the Door, 'till ſuch Time the Owner condeſcends to mount: For, (as I ju now hinted,) no Light, or as little as poſſible ſhoul come near a Horſe for ſome Time before he is rid if the Night be dark; ſeeing it dulls or confound his Eye-Sight for ſome Time at firſt ſetting out, i which Space his Maſter may very likely repent it and curſe the poor Beaſt for ſtumbling, when h himſelf was the Defaulter.

CHAP. XIII.

Of Diſeaſes of the Eyes in General.

Horſes more ſubject to Diſeaſes of the Eyes than Men, and why.

HORSES are exceedingly ſubject to Diſeaſe of the Eyes, by Reaſon they are obliged t ſtoop or hold down their Heads (one half of thei time) in Order to come at their Food, ſo that th Blood-Veſſels in the Head are all at that time more upon the Stretch, than they can be ſuppoſed whe a Creature has the Head erect.

It is not to be imagined with the Vulgar Part o Mankind, *(who have no other Way of accounting fo Nature's Operations, than from Appearances,)* I ſay we muſt not ſuppoſe that Humours fall down upo a Horſe's Eyes, becauſe he often holds down hi Head for a conſiderable Time together, when he i at Graſs; no, the Reaſon is becauſe the Blood' Circulation, in the Veins about the Neck an Head, is in ſome Meaſure impeded or hindered and this, by Reaſon of the Blood in the Neck Veins, being in almoſt a perpendicular Situation, when his Head is down; ſo that the impelling

Force

Force from the antecedent Blood in the Arteries must be greater to raise a perpendicular Column of Blood in the Veins, than is required to raise a Diagonal one, which is, when the Head is little lower than the Body. And nothing evinces this Truth more, than what we observe in sick weakly Persons, to wit, that they will bear twice the Quantity of Blood to be taken away from any Part of the Body without being sick, when they lye upon a Bed or in a Horizontal Posture, than they can do in an erect or upright one; because, in the latter, the Column of Blood in the *Aorta* or great Artery rising out of the Heart, presses so heavily against the left Ventricle or Cavity in the left Side of the Heart, that it is scarce able (in it's Systole or Contraction) to raise it, in Order for Circulation. And the true Reason of weak People's not being able to sit erect without Sickness proceeds from the like Cause, just now assigned. So that even from this minute Circumstance of a Prone or an erect Posture, several Feats may be performed with relation to Hæmorrhages or Losses of Blood, which to the vulgar would seem almost unaccountable. And, in my Opinion, there can be no other Reason given, why a Horse is not sick (or at least not so to appearance) during the Operation of Bleeding, than the Horizontal Posture or Situation this Creature is formed in; for, as I just now said, when an Animal is in a Prone or Horizontal Situation, there is not that Force required in the Heart to drive the Blood round the Body in its Circulation, as there is when in an upright or erect one.

Weak Persons easier in a Horizontal Posture than an erect one.

Why a Horse is not Sick when Bled.

I know no one Thing which more endangers a Horse's Eye-Sight, than of a sudden to turn him from good and warm Keeping (I mean what is commonly understood by high Feeding) to a worse kind of Living; for I have been a Witness of it several Times, and have observed, that when by turning a Horse from good to very low Keeping, his Eyes have grown dull and sunk in his Head, so

Low keeping after a Horse has been high fed endangers his Eye-Sight.

that in a very little Time he must inevitably have gone Blind: Yet upon such Horse's being sold into the Hands of a more generous Master, who was not so niggardly in his Allowances to the poor Beast, his Eyes, have again become full and clear, and acquir'd, in some reasonable Time, their former Liveliness and Vigour.

Mr. *Gibson*'s Remark about the Eyes.

Mr. *Gibson*, in his Book of *Farriery*, *p.* 67. has one very good Remark, to wit, "*That Diseases of* "*the Eyes from outward Accidents, become more or* "*less dangerous, according as the Horse is in a good* "*or bad State of Health when such Accidents befall* "*him.*"

This Remark is not only just as to the Eye in particular, but likewise in the Case of Wounds in any other Part of the Body; and when we say such a one has good Flesh to heal. I cannot find there is any more in the Affair, than that such Person is in a good State of Health, or that his Blood and Juices are of a Balsamick or healing Nature or Quality; and this is every Day's Experience, to wit, that in the recent or fresh Wounds, little more need be done (provided such Wound be in what we call a fleshy Part, then Binding it up in warm Blood; and by keeping it washed once a Day with any Liquor, it is no matter what, whether Brandy or Rum, or Milk and Water warm, the Wound will heal as well, and much sooner than it would do by the Application of Plaisters, Ointments, *&c.* And our Fore-fathers, not considering the Reason of Things so well as we do now, imagined fresh or green Wounds were cured by Sympathy, and became so far infatuated, as to dress the Instrument, or at least lap up in clean Linnen the Tool with which the Wound was given, and by keeping such Instrument lock'd up, and the Wound from the Air, thought it healed in a short Time.

Good Flesh to heal, the Reason of it.

The Folly of pretending to cure Wounds by Sympathy.

We have a great many surprising and even Romantick Stories of the Efficacy or Virtue of a Powder, called the Sympathetick Powder, particularly

Sir

Sir *Kenelme Digby* is very full in its Commendation, and is of Opinion, great Wonders are performed by Sympathy. His Powder was a Preparation from Salt of Iron, or what we call Copperas; but the Receipt is not worth Tranſcribing, otherwiſe I would give it the Reader. Sir *Kenelme Digby*'s Sympathetick Powder.

The Operation of the Powder (as moſt Preparations of Iron are) was of a Styptick or binding Quality, much of the Nature of Dr. *Eaton*'s Baſſamick Styptick, ſold by Patent, which is a very good and pretty Compoſition of Steel, or Iron, although there ſeems to be an Abſurdity in the Title, to wit, Baſſamick Styptick, which is meer Nonſenſe:—However, I ſay, the Medicine is exceeding prevalent in many Diſorders, attended with Loſſes of Blood; and ſuch things when applied to Wounds (that is freſh Wounds) bind up and ſtop the Mouths of the lacerated and torn Blood-Veſſels, and by that Means the Wound ſooner conſolidates or grows together.

CHAP. XIV.

Of Wounds or Blows on the Eye, and other external Accidents.

IF the Reader will but give himſelf Liberty to ſtudy a little the Anatomy of the Eye, according to what I have already ſet down, he will eaſily judge whether it is the *Cornea* or Horny Coat, or ſome other Part of the Eye which is affected: But as the *Cornea* or Horny Coat is moſtly the Scene of Action in Wounds of the Eye, I ſhall chiefly confine myſelf to that particular Part in this Chapter: for the *Cornea* or *Tunica Adnata*, which is only the opaque *Cornea* or White of the Eye; I ſay theſe, or the one of theſe, always ſuffer in Wounds, Blows, *&c.* of the Eye, and the more ſo, according as the Inſtrument with which the Wound Of Wounds, Blows, *&c.* in the Eye.

i given is more or leſs pointed or ſharp. But if the Blow or Stroke be given with an obtuſe or blunt Inſtrument, then the Parts adjacent to the *Cornea*, as well as thoſe within the Globe of the Eye, may be concerned, inſomuch that the very Blood Veſſels which nouriſh the *Iris*, Cryſtalline, *&c.* may be broken, and the whole Eye guſh full of Blood in an Inſtant. Nay, I have known it happen from the Stroke of a blunt Inſtrument, ſuch as a Cane or the Handle of a Whip, (which paſſionate People are but too apt to make uſe of,) that the very Cryſtalline Humour of a Horſe's Eye has been forced out of its *Capſula* or little Bag, and either fallen down to the Bottom of the Aqueous Humour, or advanced forward through the Hole of the *Iris*, which is, what People, (though improperly) term the Sight of the Eye; and which ſoever of theſe is the Caſe, it is not to be remedied by Art: ſo *Honey of Roſes, with a little Spring Water, and the White of an Egg, mixed together, and applied with a Feather*, is, in my Opinion, as good as any Thing elſe one can apply, to aſſwage the Inflammation, *&c.*

Honey of Roſes and Spring Water good againſt Inflammation of the Eyes, from Bruiſes, *&c.*

Mr. *Gibſon* talks of Plantain-Water, or Roſe-Water; but theſe kinds of diſtilled Waters, with many more which are obtained from Herbs, and ſuppoſed in their Natures cooling, have not any Virtue more than the Pump-Water. And therefore, the common Trick of Apothecaries ſubſtituting it inſtead of Plantain-Water, is no harm at all; Therefore, if this or the like were the greateſt of their Impoſitions, I ſhould never blame them, whatever Notions the good old Houſe-keepers may entertain of Plantain, Roſe, or Hyſſop Waters, with at leaſt forty more of the ſame Tribe.

The inſignificancy of Roſe-Water, Plantain-Water, *&c.*

It is very poſſible for a Horſe to get ſuch a Bruiſe or Cruſh upon his Eye, in caſting or throwing over, (eſpecially if any Stone or other hard and unequal Body lie in the Way,) that the Humours, which ought to be in their diſtinct and ſeparate Coverings, may

may be turned a little ſideways, and his Sight loſt, although the Eye keeps its due Fullneſs and Proportion: But this Diſorder cannot well be known, but by thoſe who underſtand the Anatomy of this ſo admirably contrived Organ of the Body.

I remember a very odd Caſe, ſomething like this I am treating of, which happened to a Man's Eyes, and, as it is I think ſcarely to be parallel'd, I muſt beg leave to name it in this Place.

The Caſe was this; one *Henry Dumball*, near *Wigan*, happened to receive a Stroke upon one of his Eyes in a Quarrel, which entirely deprived him of Sight on that Side, although his Eye was as plump and full as the other; nor did he tell me when I ſaw it, that he had much Pain after the Misfortune.

A very odd Caſe.

I obſerved the Humours of the Eye diſplaced, though I had reaſon to believe their Coats or Coverings pretty whole and entire. The Cryſtalline was advanced nearer the Pupil (or little Hole in the middle of the *Iris*) than it ought to be, and withall turned ſideways; ſo that by this (I mean the Cryſtalline's being advanced nearer the Pupil) the Rays of Light muſt fall confuſedly upon the *Retina*, in the ſame manner as when, in the *Camera Obſcura* before deſcribed, the Paper which repreſents the *Retina*, is held at too great a Diſtance from the Convex Glaſs, which repreſents the Cryſtalline Humour. So that finding the Eye in this Pickle, I adviſed the poor Man to reſt contented, and not throw away his Money upon ignorant *Itinerants*, which we daily ſee is too often the Caſe of the deluded Vulgar: But this Man's Evils did not end here; for a few Years afterwards, he happened to fall out with one of his Neighbours, who in the Fray twiſted his Finger into poor *Dumball*'s Hair, and ſqueez'd his Thumb with ſuch Violence into his Eye, that, as the firſt, ſo was the other Eye, loſt, and as near as poſſible remained in the like Situation and Circumſtance with it. And this in-

deed was a deplorable Caſe, which made the poor Man ſeek out on every Hand for help, notwithſtanding that I had given him my Opinion, that his Eyes were incurable by Art; and if he ever recovered, it muſt be by Accident. But what does it ſignify talking to blind Men, and telling them the Truth; for though they are abſolutely incurable, they are ſtill in hopes of receiving Benefit from ſome *Pretender* or other, who does nothing effectually beſide picking the Patient's Pocket; and really one would be ſurprized, to find ſo many poor deluded Mortals ſeeking Relief from theſe ignorant *Impoſtors*.

Mr. Nicholas Kent's Caſe.

I know ſeveral Gentlemen and Ladies who have the Misfortune to be incurably blind; but more particularly one, to wit, Mr. *Nicholas Kent*, an eminent and very honeſt Sollicitor in *London*, who is quite blind; yet to a Perſon not well acquainted with the Structure of the Eye, this worthy Man appears as if he could ſee as well as any one in the Room with him. His Caſe is a *Varix* of the Blood-Veſſels, chiefly of the *Retina*; what I mean by a *Varix*, is a Dilatation or Stretching of the Veins, not the Arteries, where the Blood turns into a kind of Eddy, and makes a Knot upon the Part. I ſay this is Mr. *Kent*'s Caſe, and is not any ways remediable, though I have been informed he applied himſelf to Mr. *T—r*, the Travelling Oculiſt, who I doubt not would give good Encouragement for a good Fee. But I have reaſon to doubt that Mr. *T—r*'s Hand and Heart are mere Strangers to one another; or that if he ſpeaks as he thinks, he is very ignorant. But to return to poor *Harry Dumball*, who led me into this tedious Digreſſion.

Dumball's Caſe continued.

I ſay, this poor Fellow, after he had been Blind ſome Years, applied himſelf to Mr. *Green*, ſaid to be Son to the famous *Green* of *Doncaſter*, a pretty good *Stage-Orator* in his Time, who promiſed to reſtore him his Eye-Sight: But the Man being poor, a Perſon undertook to make a Collection for him to pay

pay the Doctor, so amongst the rest they ask'd my Charity. I told them that I would lodge ten Guineas to be paid Mr. *Green* when the Cure was perfected, but was unwilling to give any Money otherwise; however, I gave half a Crown, and a little wholesome Advice into the Bargain; which was, not to give Mr. *Green* any Money till such Time as he had perfected the Cure, seeing he had promised it on such Conditions. In fine, this *Mountebank* poked with his Needle for some considerable Time together, in the poor Man's Eye, (for he did but try one of them,) yet without Success. However, thus much I must say in behalf of Mr. *Green*, which is more than I can say for any else of the *Itinerant Tribe*, that he had not thrust his Instrument or Needle unskilfully into the Man's Eye; for he had not in the least Hurt or Wounded any of the Blood-Vessels of the *Iris*, nor had he turned the Point of the Needle inward, so as to do any Damage to the *Crystalline* or *Vitreous* Humour; but on the contrary, he had (like a skilful Operator so far) kept the same wholly in the *Aqueous* Humour, with a steady Hand, and his only Fault or Imperfection was, that he was not able to judge rightly of the Disorder: For had it been a Cataract that this Man had labour'd under, I am perswaded this Gentleman would have removed it with Safety; so that in the Main, he neither did Good nor Harm to this Blind Man, which is much more commendable, than what is done by many ostentatious *Pretenders*, (who would have us believe they can play Cups and Balls in a Man's Eye,) to wit, thrust the Needle so unskilfully into this noble Part, that they make it impracticable for any after them to do Service; although the Distemper (before they meddled with it) was such, as might have been removed by a good Hand, even in the fourth Part of a Minute. But least I should intrude too much upon the Reader's Patience, I draw near to a Conclusion of this true History.

Dumball's Caſe continued.

As I juſt now ſaid, *Dumball* ſtill continued Blind, after what had been done to him by Mr. *Green*; but a few Years afterwards, he happened to be jeſting and wreſtling with one of his Neighbours, who caught him round the Head in his Arms, and ſqueez'd his Face againſt his Breaſt, and a Button by Accident happening to light againſt one of the Blind Man's Eyes, it ſeemed to hurt him very Sore, and ſome Blood was (by the Violence of the Squeeſe) forced out of the Eye; but what is moſt to be wondered at, the Blind Man received Sight of that Eye, from this Accident; which is more than all the Surgeons, Oculiſts, *&c.* put together, could have done by Art. And whoſoever ſhould tell me he could have performed this by any Inſtrument, or other Contrivance, I ſhould look on ſuch Perſon, as no more than a vain empty *Coxcomb*, who can ſay more in one Minute, than he will perform in his whole Life, though he ſhould outlive *Methuſelah*.

Now, in this Caſe, there is no manner of Doubt to be made, but the Cryſtalline Humour of the Eye muſt (by the violent Squeeſe of the Man's Thumb) be forced out of its *Capſula* or that thin Covering by Anatomiſts called *Tunica Aranea*; and in ſuch Caſe, the Rays of Light muſt be brought to a *Focus* or Point, quite in a different Part of the Eye to what they ought to be, and of conſequence the Man's Sight muſt be loſt while the Cryſtalline continued in that State and Condition: And I am convinced, this was the true Caſe; for I could plainly perceive a little of the Edge of the Cryſtalline Humour (eſpecially if I look'd ſide-ways) through the *Papilla* or Sight of the Eye, and when this Eye happened to be again preſs'd by the Button of a Coat as aforeſaid, the Cryſtalline ſlipped back into its proper Place, which is (as I have ſaid) immediately behind the *Iris*, and into a ſmall Cavity in the Middle of the Vitreous Humour; and by this Means, the Rays became properly convergent upon the *Retina*.

In

In the firſt Place; if a Horſe's Eyes be out of order, they ſhould be well looked into before you preſcribe: For, if he be quiet, one may eaſily turn up the Eye-Lids, and view if any foreign Body, ſuch as Duſt, or Moats of any kind, ſtick upon their Inſide; or upon the Horny Coat, which, as I have ſaid, is the tranſparent and forepart of the Eye; if there is, it muſt be carefully wiped off with a Spunge and Water. The Spunge may be tied to the End of a ſmall Stick, or the like; after this the Eye will mend of itſelf; for, *when the Cauſe is taken away the Effect ceaſes*; only let the Eye now and then be waſhed with the white Eye-Water, as hereafter preſcribed.

Look well into a Horſe's Eye before you preſcribe.

Take Roch-alum, and white-Vitriol, each one Ounce; Calcine or burn them to a Calx or white Maſs, in a Crucible or upon a clean Fire ſhovel; when this is done, powder 'em and mix 'em with three Pints of Boiling-Water; to this may be added of Lapis Calaminaris finely powdered, one Ounce.

The white Eye-water made for about 6d. per Quart.

And this may be ſufficient for moſt Rheumy, Sore or Blood ſhot Eyes, or to heal any little Wounds or Ulcers of the *Cornea* or *Tunica adnata*, whether occaſioned from Diſtillations of Rheum, or extraneous Bodies which may have fretted and wounded the ſame.

If this Proportion of the Roch-alum and Vitriol be too ſharp, it may eaſily be lowered by adding a little more Water to it; and, as I have before hinted, Pump-Water is as good as Plantain or Roſe-Water.

If the Horſe's Eye be ſwelled and inflamed, he ſhould be bled in the Neck, or where elſe you pleaſe; for, notwithſtanding what Mr. *Gibſon* has ſaid about making an Orifice too near the affected Part, there is not ſo much in the Matter as he would have us believe, unleſs in very acute Caſes; becauſe all the Good which accrues from bleeding is certainly no other than from the Quantity's be-

Bleeding is good for an Inflammation in the Eye.

ing leſſened. Therefore, in my Thoughts, when this Operation is performed either upon Man or Brute, it ſhould be done to the Purpoſe, that is, to take away as much Blood as the Violence of the Symptoms require, and the Strength of the Creature can well bear; tho' indeed, I adviſe that the Blood may be drawn away at ſeveral repeated Operations, rather than all at once, for Reaſons very well aſſigned by the ingenious Dr. *Hales* in his Hæmoſtatical Experiments, vol. 2d. As to Conſerve of Red Roſes, Vinegar, Bole-armonick, Whites of Eggs, or ſuch like outward Applications, there is not much to be expected from them; ſo that the Horſe's Eye need only be bathed or waſhed well with warm Water and a large Spunge; or, for want of ſo uſeful a Thing about a Stable, a pretty large Piece of Linnen-Rag may ſerve the Turn. And for healing any Wound of the Eye, I dare ſay the following Ointment will be ſerviceable, when the aforeſaid Water is not in Readineſs, provided the Owner of the Horſe be endow'd with a little Patience.

An Ointment for Wounds of the Eye.

Take Ointment of Tutty, one Ounce; Honey of Roſes, two Drachms; white Vitriol calcined or burnt, one Scruple; mix theſe cold, and apply 'em a little warmed with a Feather between the Eye-Lids, Morn and Even for ſome Time, and waſh his Eye at Noon with a little warmed blue Milk and a Spunge.

Purging, &c. of no Service in curing Wounds of the Eye.

Purging, Rowelling, Clyſtering, *&c.* are not of much ſignificancy in the Cure of Wounds of the Eye; but as I have juſt now ſaid, Bleeding and the Ointment, as before preſcribed, are (with Patience) ſufficient to effect it.

I muſt not cloſe this Chapter, without taking Notice of one Thing in Mr. *Gibſon*'s Book of Farriery, page 70, he ſays, that "when a Horſe's Eye "happens to burſt ſomewhat out of its Socket, or "the Violence of a Blow or Wound ſtretching or "cutting the Muſcles, the firſt thing is to reduce "it, and put it carefully in its Place, applying the "Charge, *&c.*"

Now

Now, in my Thoughts, one may as ſoon, and with the like Succeſs, put the Brain into its Place, after it is turned out, as the Eye. And tho' I agree that the Muſcles may be relaxed and recover themſelves again without much Damage; yet I cannot think the Eye with its Optick Nerve, (conſidering its Inſertion into ſo ſoft a Part as the Brain, whoſe Contexture is ſomething different from Elaſtick;) I ſay, I cannot imagine that the Eye can be turned out of the Head or Socket wherein it ſhould lye, without cauſing effectual Blindneſs. Yet the learned Dr. *T—r* may perhaps be of a different Opinion; for I have had the Honour to ſee him perform ſome ſurpriſing Operations upon Eyes; But I muſt not omit telling the Reader that they were dead Calve's Eyes, tho' indeed the Doctor told us he had done the like upon living Subjects, and that Dr. *Hollins* and Dr. *Cheſelden* were Witneſſes to his Performances: But (low be it ſpoken) the latter of thoſe worthy Gentlemen favoured me with a Letter, wherein he ſatisfied, or rather confirmed me in my Belief of *T—r*'s groundleſs Aſſertion.

Soft Food proper for a Horſe with diſtempered Eyes.

Soft Food, or ſuch as does not require much chewing, is moſt proper for a Horſe that is diſeaſed in his Eyes, and if it be in Summer time cut Graſs is beſt in the Stall; but holding down his Head in the Paſture, cannot be good for him, for Reaſons before aſſigned.

CHAP. XV.

Of Rheumy and inflamed Eyes.

Rheumy Eyes.

THERE are Horſes, no doubt, frequently troubled with Rheums and Inflammations of the Eyes, which have been ill cured while they were Colts; ſo that the Blood and Humours acquired a more than common Bent that Way, where the uſual Diſcharge was made for ſome conſiderable Time

before, insomuch that it is often very hard to stop it. And really it is surprising to observe what large Quantities a Person will bleed from the Bite of a Horse-Leech, after that Reptile has filled itself: But the Reason is, the natural Bent of the Blood to the Orifice where the Leech fastened: And indeed I have often seen the good old Gossips hard set to stop the Blood from flowing too much out of the small Wound made by this little Creature; and I have often heard People (who have been used to Bleed Spring and Fall) say, that they could perceive the Blood pricking and making an Endeavour for Discharge at the old Orifice.

Observation on the Bite of a Horse-Leech.

Just thus it fares in Relation to most Discharges; for if they continue too long, the Diameters of the Vessels near the Part are enlarged by the continual Influx of the Blood and Humours; so that 'tis some Time e'er they can be restored to their former State and Condition of Elasticity.

The Diameters of the Vessels increased by long and continued Discharges.

The Causes of Rheumy Eyes are very numerous; as by Surfeits, hard Riding, and the like. And I have often observed, that low and poor Feeding, of a Horse which has been used to better, very much indangers his Eye-Sight; and, that upon allowing him a proper Quantity of Oats, *&c.* he has recovered his Sight to a Miracle, even after his Eyes might be thought sunk in his Head (as it is called); and there is very good Reason for it, if one would but consider a little, which is, that while a Horse eats a good Quantity of Oats, and is much in Use, his Blood and Spirits have their due Motion and Vigour; so that the Globe or Ball of the Eye is kept full, and the *Axis* of Vision lengthened to a proper Distance. But if such a Horse happen to fall into bad Hands, who ride him hard, and allow him little Corn, his Eyes are in Danger, by Reason it will often produce an Atrophy or Consumption of the Eye, for want of due Nourishment to be derived from the Blood, *&c.* for the Use of this so noble and wonderfully contrived Organ.

The Cause of Rheumy Eyes.

An Atrophy or Consumption of the Eye, how caused.

If

If a Horſe is Plethorick or too full of Blood and Spirits, and his Eyes are inflamed or Rheumy, in ſuch Caſe Bleeding, Purging, Rowelling, *&c.* are of Service, although Super-purgation or Over-purging is as bad, and often of dangerous Conſequence, not only to the Eye-Sight, but alſo to the Bowels or Inteſtines, which it much weakens. Of ſuch Concern therefore is it to keep the Golden Mean, and not to be over-fond of Purging or Bleeding our Horſes when there are very ſmall Reaſons for it, nay perhaps no other than that we are fond of ſeeing ſuch Evacuations, by Reaſon they beſt quadrate with our outward Senſes. The Method of Cure for Rheumy Eyes.

I ſhall offer the following as a good and ſafe Purge for Rheumy Eyes.

Take Horſe Aloes, ten Drachms; Cream of Tar *ar, one Ounce; Senna in Powder, half an Ounce;* *Oil of Anniſeed, two Drachms; Syrup of Buckthorn,* *s much as is ſufficient to make it into a ſtiff Maſs:* Which form into two Balls, and give them in the ommon Manner with about a Quart of warm Ale, o waſh them down. A Purge for Rheumy Eyes.

The Price of this Purge ſhould be about Sixteen ence, (Apothecaries Profit) and there is no fear f any of the Drugs being bad, they are ſo cheap, nleſs the *Oil of Anniſeed*, which is worth eight hillings a Pound at *London*; and as I have not eard of any Method of trying its Goodneſs with-t a deal of Trouble, I muſt recommend my Rea-ers to make Choice of honeſt Apothecaries (if any ch there are) to make up the Medicines I preſcribe. *Oil of Anniſeed* has this peculiar Quality in it, fferent from moſt, if not all other Chymical Oils; wit, that it congeals or ſeems to freeze even in rm Weather. The Price.

After Bleeding, Purging, *&c.* it will be of Ser-e to uſe the Water, ſuch as before preſcribed.

If

How to be apply'd.

If a Horſe has Rheumy running Eyes, the Water will be of great Uſe by putting it into them warm, not only twice, but ſeveral Times a Day, perhaps four or five Times: For the *Tunica Cornea* or outward Part of the Eye is (in theſe Caſes) full of ſmall Wounds or Ulcers like ſo many Pin-Points, which require ſomething drying and healing to be applied pretty often, that the Lodgement of the ſharp Humour may not farther corrode its tender Fibres.

Laſtly, I ſhall for Variety ſet down an Ointment for the ſame Uſe as the Water, which I have known ſucceed where that had failed. And I can attribute it to nothing more than the Ointment continuing longer upon the Eye, and not being ſo ſoon waſhed off by the Moiſture and Movement of it.

The Ointment for ſore Eyes.

Take Lapis Calaminaris and Tutty prepared as fine as may be, (by grinding upon a Marble) of each half an Ounce; Roman Vitriol in Powder, half a Drachm; White Vitriol and Alum calcined, each half an Ounce; Camphire, two Drachms; mix theſe very well in three Ounces of freſh Butter, and apply them warm thrice a Day with a Feather; ſo that it actually get into, or rather upon the Horny Coat of the Eye. And I beg Leave to inforce this the ſtronger, becauſe moſt People do not ſufficiently open the Eye-Lids when they apply Waters, Ointments, *&c.* for the Cure of Rheumy or ſore Eyes.

I have in my Notes upon Capt. *Burdon*'s *Pocket-Farrier* remark'd that the Captain was a little out in his Calculation, when he ſaid, "no Powders "ought ever to be put into a Horſe's Eyes;" and ſhew'd that the Water thoſe Powders are mix'd with, ſerves only as a Vehicle to them, no more than the Freſh-Butter in the Ointment juſt preſcribed; ſo that in Fact it is the Powders which are the Baſis or chief Thing in the Compoſition. Nor is it available to ſet down more Forms than theſe two, ſeeing the

he Water, or Ointment, may either of them be nade weaker, as the Caſe requires, by adding more Water to the firſt, or more Butter to the latter.

I have read over at leaſt an hundred Forms of lifferently contrived Eye-Waters, Powders, Ointnents, &c. for the Cure of Rheumy Eyes, but let heſe ſuffice with thoſe who have ſo much Learning s not to pin their Faith upon the Number of Inredients in any Preſcription, but rather upon a few ightly choſen Drugs properly adapted to the Cuative Intention; for of the other Practice there is o End, neither is it ſupported by Right Reaſon.

De Grey has ſome Things here and there worth Obſervation in his Book of Farriery; but he had a omical out of-the-way Notion, when he fancied hat human Dung fry'd to a Coal and powder'd, nd blown through a Quill into a Horſe's Eyes, akes away Specks, Films, &c. Indeed there is omething of a Salt called *Animal Salt* contained in he Excrement of all Creatures, but more eſpecially in he Dung of thoſe which diſcharge the Urinous Salts ong with it, having no Piſs-Bladder or Receptacle r the Urine, ſuch as Geeſe, &c. whoſe Dung is hite at one End; (when it dries haſtily:) and eſe are the Urinous Salts of ſuch Uſe among the mmon Sort of People for the Cure of the Jaunce; but I am of Opinion, that the Dung of Anials, however cooked, will be Dung ſtill, and not ail much in curing any Diſeaſe of the Eyes.

De Grey cenſured.

CHAP. XVI.

Of Moon-Eyes or Lunatick Eyes.

Of Moon-Eyes.

MR. *Gibſon* defines *Moon-blindedneſs* to proceed from "an obſtinate Stagnation in the ſmall Arteries of the *Tunica Adnata* or outermoſt Coat of the Eye, commonly called the White of the "Eye,

Mr. *Gibſon's* Definition of Moon-blindedneſs cenſured.

" Eye, and a Relaxation of the ſmall Kernels t
" are ſeated at each of its Angles or Corners ; a
" that, by the *Lentor* or Corroſiveneſs of the M
" ter, it at length deſtroys the Tranſparency a
" Clearneſs of the *Cornea*, ſo as to cauſe Blindneſ

This is, in my Thoughts, a very lame Deſcr tion of the Diſtemper. For if there was an obſtin Stagnation of the Blood in the ſmall Capillary A teries, the Conſequence would be a Suppuration Gathering, (as 'tis commonly called ;) and fr thence the *Cornea* or Horny Coat would be deſtroy in Part, or in Whole, by the Formation of ſo thi a *Cicatrix* or Scar that the Rays of Light cou not be admitted ſufficiently, in order to form d tinct Viſion ; Whereas we find by Experience, th Moon-blind Horſes do, at ſome particular (thou not regularly ſtated) Times, ſee very well, inſ much that no Alteration can be obſerved, eith within or without the Globe of the Eye.

Secondly, I have ſeldom obſerved, that the Co roſiveneſs of the Humour or Matter deſtroys t Tranſparency of the *Cornea* ; I mean in Lunatick Moon blind Horſes. And therefore, I am pret confident, from repeated Obſervation and Diſſect on of Moon blind Eyes, that the true Seat of th Diſtemper (ſo very peculiar to Horſes) is in t *Iris*, otherwiſe termed *Uvea*, before deſcribed ; an that it is an Inflammation of that particular Co of the Eye, which may proceed from ſeveral Cauſes ſuch as Surfeits, hard Exerciſe, or the like ; an the faint Yellowneſs obſerved by the *Sieur Solleyſel*, appearing under the Apple of the Eye may plainly be ſeen by any one, who underſtand the Anatomy of this Organ, ſituate upon the *Uvea* And this Yellowneſs is no other than what frequent ly happens in other Parts of the Body, when a Inflammation is going off, occaſioned (as I appre hend) from the Blood and Humours being obſtructe in their Circulation.

The true Seat of the Diſtemper.

From

From what has been ſaid, it will eaſily be judged how we ought to proceed in the Cure of this Malady. And firſt of all, Leſſening the Quantity of Blood muſt have the Preference: This ought to be performed as ſoon as may be, and a good deal taken away from the Thigh-Veins, (if you pleaſe) by Way of Revulſion. After this, Purging may take Place, and ſuch Things which promote the Urinary Diſcharges; and for this End, I know nothing better than the Turpentines of all Sorts. For Example. The Cure.

Take three Ounces of Venice-Turpentine; living Millepides, half a Gill; bruiſe them, and mix them with the Turpentine, and make all into a Maſs, with Flower of Brimſtone: Out of which may be form'd ſmall Balls, of the Bigneſs of Pidgeons Eggs; one of which may be given in a Morning for a Fortnight together, after the Horſe has been purged twice or thrice with the common Aloes-Purge before preſcribed. Balls for Moon-ey'd Horſes.

I know Mr. *Gibſon* ſays, Phlebotomy or Bloodletting oftentimes proves hurtful in Moon-blindneſs; but certainly he has not thoroughly conſidered the cauſe of this Diſorder, ſeeing nothing more, or ſooner relieves the Inflammation, than Leſſening the Quantity of Blood.

I do not think that outward Applications are of Service to Moon blind Horſes, by reaſon the Seat of the Diſtemper is within the Ball or Globe of the Eye, and ſuch Things reach no farther than the *Cornea* and outward Coats. Outward Application of no Service, and why.

Laſtly, when all other Proceedings have failed, I have known the Temporal Arteries tied with waxed Silk in two Places, each at the Diſtance of about an Inch, and then cut aſunder, and the Wound healed with any common Digeſtive Ointment. And this Method I have ſeen perform a Cure more laſting, than any other Practice whatſoever; and a very good Cutting the Temporal Arteries, a Cure for Moon-blindneſs.

good Reason there is for it, to wit, that by makin a Ligature upon the Temporal Arteries and dividi them, the too great Influx of Blood to the Eye impeded, though there are sufficient Branches lef to furnish a proper and due Quantity of Blood to i Parts: Yet setting all these Things aside, if I ha a Horse subject to this Distemper, the first Thing should do, would be to get rid of him, though don't say I would sell him for a sound Horse, as have heard is too common among Dealers, wh think nothing of Conscience or Reputation.

There is little or no Reason in what Mr. *Gibs* or the *Sieur de Solleysel* have writ, with relation t Foals or Colts which have Oats given them, to wi that their Eyes are in Danger from thence; becaus in chewing the Oats, the Muscles about the Eye are so strained, that a Defluxion of Rheum, or, i their Words, more Blood than necessary is drawn towards the Eyes, by the Motion as aforesaid. An therefore they direct, that the Oats be first ground or stamped, which I think is proper, so far as they are nearer Digestion, or in other Words, more easy to digest: And this is all I can say in Recommendation of the Paragraph.

CHAP. XVII.

Of Films, Webs, &c. causing Dimness of Sight.

Eye Waters, &c. of no Service in Disorders within the Globe of the Eye.

IT is most certainly of the utmost Importance, to distinguish between those Diseases of Infirmities affecting the outward, from such as have their Seat upon the inward Parts of the Eye; for if the Disorder be inward or within the Globe of the Eye, all outward Applications of Water, Powders, Ointments, *&c.* are quite out of the Question: And where there is one Disorder of the Eye outwardly, there is ten inwardly, I mean in the Globe of the Eye;

ye;) for the Eye-Lids, &c. are not ſtrictly to be ccounted as Parts of the Eye. Therefore, I ſay, nleſs a Perſon will give himſelf the Trouble to arn ſomething of the Anatomy of the Eye, (which ay be done in an Hour's Time,) he can never be ble to tell whether the Diſtemper is inward or out-ard. And I have often been ſurprized to ſee the ſitive Ignorance of Farriers, nay, even of ſome urgeons, (that ſhould know better,) who, when e Creature has labour'd under the Diſtemper call'd Cataract, (which is an Affection of the Cryſtal-ne Humour within the Globe of the Eye,) have en applying Eye-Waters, &c. as if the *Cornea* or tward Coat had been inflamed and full of ſmall lcers.

Mr. *Gibſon* ſets down an Eye-Water of a blue olour, for the Cure of Films occaſioned from an flammation of the Eye; and the ſame is a very od Water; but one need not take the Trouble of aking it, for it is to be had at any Apothecary's two Pence an Ounce; only aſk for *Aqua Saphiri-*, or the blueiſh Eye Water. It is called *Saphi-a*, from the Reſemblance in Colour to the Sa-ire Stone. *Aqua Saphirina* for the Cure of Films. The Price. Why called *Saphirina*.

I ſhall only recommend the Ointment preſcribed ſore Eyes, *Chap.* 15. whenſoever a Horſe has Film or Speck, occaſioned from the Sharpneſs Rheum or the like, falling upon his Eyes: But n, I would be underſtood to uſe it when the lemper is new or recent; for it will (to my owledge,) both cleanſe and heal the little Sores h Safety: But if the Film or white Skin upon Eye, be of long ſtanding, or what we call a *Ci-ix* or Scar from the healing of a Wound of Eye, I ſay, if this be the Caſe, I very much ſtion whether any Thing will be able effectually move it, notwithſtanding there are many Noſ-ms for the purpoſe. And if any Good be done, nuſt be from the Uſe, nay long continued Uſe, uch Things, as by their Roughneſs and Solidity (when

(when introduced into the Eye) ſcour off the outward Coat of the *Cornea*; and theſe Things being mixed with Honey, or any other healing Thing may now and then be of ſome little Service. And in my Thoughts, Powdered Glaſs is moſt likely to effect a Removal of ſuch Films or Specks, which appear upon the outward Surface of the Eye, when there is not any Inflammation accompanying them. For Glaſs finely powdered, and ſifted through a fine Flower Sieve, mixed with Honey and a little freſh Butter, I have known to take away a Speck or Film when all other Things have failed; and the Reaſon is, no doubt, becauſe Glaſs will keep its Form, and not be diſſolved into leſſer Particles by the Motion and Waters of the Eye; whereas *Tutty* or *Lapis Calaminaris*, by ſuch Motion, *&c.* of the Eye are rendered ſo ſmooth, that they take little Effect upon ſo hard a Body as the Film is, when it has been of long ſtanding. And the Operation of the Glaſs in the Eye, may well be compared to the Fiſh Skin uſed by *Joiners* in ſmoothing up their Work; for as the ſmooths and poliſhes the Wood ſo does that the *Cornea* or horny Coat of the Eye and with Safety too, as I have often found by Experience. But then (as I ſaid before) it ſeldom ſucceeds if the Film is old and hardened, unleſs the Owner of the Horſe has a deal of Patience, and continues the Uſe of it for a long Time together.

Powdered Glaſs proper for taking off Films, *&c.*

As to cutting out the *Haws*, when the Excreſcence is ſo large that it damages a Horſe's Sight there may be ſomething ſaid for it: But as this ſimple Operation may be eaſily performed with Safety by any of our common Farriers, and as the ſame is ſufficiently deſcribed by Mr. *Gibſon*, I ſhall not trouble the Reader with an Account of it any farther, then telling my Opinion what the Diſorder is. And Firſt, I take what the Farriers call the Haws to proceed from a long and continued Defluxion of Rheum upon the Eye, or a preternatural Heat within the Globe of the Eye itſelf; and by this

Cutting out the Haws.

The Haws, what.

th

ıe kernelly Subſtance (as Mr. *Gibſon* terms it) in ıe greater *Canthus* or Corner of the Eye towards ıe Noſe, becomes hard and griſtly, inſomuch, that have ſeen it advance near as far as the middle Part the *Cornea*, commonly, tho' erroneouſly, ſtiled ıe Sight of the Eye. And in this Caſe, as I juſt ow hinted, there is nothing to be done but to cut ıem away, and the Ointment for ſore Eyes before reſcribed, will be ſufficient to heal the Part, at ıe ſame Time it is employ'd to poliſh and heal the)iſorders of the *Cornea* or outward Parts of the ye.

De Grey makes mention of the *French Marſhals* r *Farriers* taking up the *Waſh* of the Eye with a Needle and Thread, and cutting out the Haw as loſe as they can, but diſcommends ſuch Practice, or as much as that the Horſe becomes blear-ey'd fterwards. Therefore it is beſt to cut out ſo far nly as the griſtly Part (which is really the Haws) ſpreads, and no farther, by Reaſon if you take away oo much of the glandulous Subſtance, there will e a Deficiency in that Part of the Eye; inſomuch hat the greater *Canthus* or Corner will ſtand full f Water. So that *De Grey* has very juſtly obſerved n this Caſe.

A good Obſervation of *De Grey*'s.

Mr. *Gibſon* is very dark in his Reaſoning about everal of the Diſtempers incident to the Eyes of Horſes, particularly what he ſays of a *Cataract* at ag. 83. is very far from the Truth; to wit, that ne Matter which forms this Diſorder is continually illing into the *Aqueous* or watery Humour, and rther, that we may know a *Cataract*, before it is pe by rubbing the outſide of the Eye; for by ch Means he ſays it will ſhift its Place.

Mr. *Gibſon*'s Account of a Cataract cenſured.

I cannot indeed be ſurpriſed that Mr. *Gibſon* ould miſtake the true Seat of a *Cataract*, ſeeing any greater Men than he have fallen into the like rror, and imagined it placed in the Watery Hu-our; whereas nothing can be more abſurd and diculous: For, it is now made manifeſt that the

Cataract

The true State of a Cataract.

Cataract is ſituate upon the *Cryſtalline Humour* of the Eye, and is nothing more than an Alteration or *Opacity* of one or more of its Coats or *Strata*. For the *Cryſtalline* is compoſed of different *Strata* or Lays in like Manner as you ſee an Onion; and when (as I have ſaid) one or more of theſe Coats become Opaque or Dark, ſo as to hinder the Rays of Light from paſſing thro' the Body of the *Cryſtalline* in order to fall properly upon the *Retina*,

A Cataract, what.

I ſay this is what conſtitutes the true *Cataract*, which differs in Colour, being ſometimes White, Pearl-Colour, Yellow, Black or Greeniſh: And I am of Opinion the two firſt only are curable, yet not by any Application outwardly or Medicine inwardly adminiſtred, but by Manual Operation with the Needle, which turns off the *Laminæ* of the *Cryſtalline* that are diſeaſed, and then the Rays are admitted thro' the remaining Parts. But the Miſchief is, that if you touch a Horſe for a *Cataract*, you can't make him, or rather you can't contrive him Spectacles to wear afterwards, to help the Deficiency or Plainneſs of the *Cryſtalline*, ſo that his Sight will not be at all perfect, tho' he may have enough to keep himſelf out of Pits and Ditches.

Removed by manual Operation only.

It has been, and I believe ſtill is a Notion among Dealers in Horſes as well as Gentlemen, that when a Horſe ſtarts much, or ſeems frighted at every Thing he meets, his Eyes are bad, and Mr. *Snape*, with like Reaſon, believes ſuch Horſes have congealed Bits like Motes floating in the *Aqueous Humour*; and that theſe, when they become adherent or ſticking to one another, from what we now call a *Cataract*: But theſe Specks, Flies, Inſects, or the like, which are imagined to go to and fro before the Sight of Human Creatures, (and no doubt it is the ſame in this Reſpect as to Brutes,) are no other than the diſeaſed Parts or Particles of the Outward Coat of the *Cryſtalline Humour*, in an initient *Cataract*; and the Reaſon we do not perceive the Motes or Repreſentation of Flies always

Mr. *Snape's* Opinion of a Cataract cenſured.

in

the ſame Place, is plain to any who has the leaſt otion of Opticks; for, unleſs the Eye be kept ily ſteady and fixed in the ſame Poſition, it is ot poſſible a Perſon ſhould obſerve the Mote or peck always the ſame.

Some will have it, that the Repreſentations I am eaking of are not occaſioned by the diſeaſed *Cry-lline*, and pretend to prove from Experiments in pticks, that no Objects fixed upon the *Cornea* or ryſtalline can be repreſented upon the *Retina*, for-much as thoſe Parts are ſo near the *Retina*, and ſuch Convexity, that the Pencil of Rays, paſſing om Object thro' them, cannot fall upon the *Re-na*, ſo as to be diſtinguiſhed; and therefore con-ude, that the Parts of the *Retina* (in the Diſtem-r I am treating of) are too much compreſs'd by Diſtention or Stretching of the Arteries, and that ch Diſtention is often the Cauſe of a *Gutta rena*.

Theſe may ſeem plauſible Arguments, but I muſt n I could never obſerve any Part of the Eye order'd in Caſe of a *Cataract*, beſides the *Cryſtal-e Humour*, altho' I have diſſected ſeveral Eyes ich were troubled with ſuch Malady. Indeed annot help thinking, but that the *Gutta Serena*, y proceed from ſuch Diſtention or ſtretching of Coats of the Arteries upon the *Retina*, I mean en ſuch Diſorder proceeds from a Bruiſe, or the e, and then it is moſtly confined to one Eye only: if both Eyes be affected with a *Gutta Serena*, that the Diſtemper came without much Pain, I apt to believe the Seat or Cauſe is an Obſtruc-of the *Optic Nerve*: But whether it be occa-ed from a Diſtention of the Blood-Veſſels which preſs and ſqueeſe the *Retina*, ſo that Objects not be repreſented to the Brain, or whether it is Obſtruction, Convulſion, or Paralytick Indiſpo-n of the *Optick Nerve*, I think it not much to preſent Purpoſe, ſeeing I am ſatisfied they are lly incurable by Art.

The Cauſe of a *Gutta Serena*.

I had

A remarkable Case.

I had a pretty odd Case of the Eyes once under my Care, which was this. A young Fellow, who was a Sailor, and a visiting his Friends upon his Return from Sea, who lived near *Ormskirk*, being one Day walking in the Fields by himself, was struck blind all of a sudden, without any previous Indisposition, either in his Habit of Body or Eyes. Upon this, he was obliged to call out and make a Noise for Help to carry him Home; and as Luck would have it, a Foot-Path leading thro' the same Field he was in, somebody pass'd that Way in a little Time, and led him to his Habitation. After a while he was conducted to me at *Lancaster*, where, upon my viewing his Eyes, I found it a *Gutta Serena* which he was afflicted with, and judg'd the same incurable, notwithstanding the poor Man's Eyes appear'd as clear, bright, and transparent both within and without, as any Person's living. The Reader may suppose the Confusion and calamitous Condition the young Man must be in, who had his Bread to earn, when I told him his Case was desperate, which proved but too true; for he lived near three Years blind afterwards, when kind Death put an End to his miserable Life.

Now what I name this Case for, is to shew, that a *Gutta Serena* may proceed either from a Dilatation of the Blood-Vessels, or from an Obstruction of the Optick Nerve; for I am sure no Person however skilled in Opticks, and the Anatomy of the Eye) could be able to judge which of the two was the Cause of the young Sailor's Blindess: Notwithstanding, I will allow, they might argue for some Time upon the Subject in a metaphysical Way without being ever a Whit nearer Truth, than they were at first setting out.

Mr. *Gibson*'s Account of a *Gutta Serena* erroneous.

What Mr. *Gibson* and others say, with relation to the Cure of a *Gutta Serena*, is meer Stuff and Nonsense: For, supposing the Cause in the Arteries as observed, this Gentleman advises *Cinnabar* Balls, which, no doubt, as *Cinnabar* is much hea-

vie

vier than the Blood, will add to its *Momentum* or ſtronger Pulſation; and this is generally ſuppoſed as moſt proper to open Obſtructions or Stoppages in the Blood-Veſſels, Glands, &c. which is very true; but then if the Stoppage or Obſtruction proceeds from the over-ſtretching or Dilatation of a Blood-Veſſel, whether Artery or Vein; I ſay, let whether will be the Caſe, if we give *Cinnabar*, or the like, we run the Hazard of quite breaking the Coats of ſuch Veſſel, from whence many and great Evils might enſue. And here it may be ſeen of how momentous a Concern it is, rightly to judge of Things, leſt we precipitately embark, and by adminiſtring Medicines of quite a different Tendency to the main Deſign of Cure, we render the Caſe almoſt deplorable, which before (by a ſkilful Man) might eaſily have been remedied.

An Obſervation on the Oculiſt's Practice.

Mr. *T——r*, the travelling Oculiſt, pretends to cure a *Gutta Serena* by convulſing the Eye, (as he is pleaſed to term the Operation;) but ſuch Pretence is meerly ſo, and of *French* Extraction; for the Mountebanks in *France* can play forty comical Tricks upon the Eyes of their deluded Patients, without eaſing them of their Diſorders. And really they have ſuch an Apparatus of Machinery to perform the Farce withal, that an underſtanding Man would be confounded to ſee it: For, not one Inſtrument out of forty, they ſhew you, can be ſaid to be of any real Uſe in performing Operations upon the Eye.

If a Horſe move his Ears forward, and ſeem to keep them much in the ſame Poſture, as a blind Horſe will do when he is turn'd looſe: I ſay, if a Horſe do this when he is led in the Hand, (or *run before*, as the Dealers Term is,) and that he ſtep a little higher than ordinary with his Feet, 'tis a ſhrewd Sign his Eyes are going to decay, or that he has ſome Inflammation either upon the outward or inward Coats of them; and tho' it be an eaſy Matter for Gentlemen to judge of the Soundneſs of the outward Parts of the Eye, yet its very difficult for

them to do so rightly of the inward, unless, as I have said before, they will give themselves the Trouble (or rather the Pleasure) of studying the Anatomy thereof, which may be learn'd in half a Day to Perfection; and then they would understand, whether the Distemper lay within the Reach of outward Application or no; and if it did not, that the Blood and Humours are then to be corrected by Bleeding, Rowelling, Purging, &c. and thereby they might save much Expence to themselves, as well as preserve the poor Creature from the torturing Application of corrosive Powders, Eye Waters, &c. which ignorant Grooms and Farriers constantly apply, having no other Notion of the Distempers of this Organ of the Body, than as if they were all seated upon the outward Parts, such as the horny Coat, &c. and so perfectly destroy a Horse's Eyes, which were, before such Person meddled with them, curable: And therefore I insist upon it, that when the Disease is situate outwardly or upon the Outside of the Globe of the Eye, nothing is more proper or efficacious than the *Ointment for sore Eyes* before prescribed; nor need a Person use any Thing else outwardly, provided he has Patience to wait the necessary and due Time for Cure, which may be longer or shorter according to the Urgency of the Symptoms: For as the Eye is a Part of the Body constantly imbued with Moisture, and of Necessity often moved, I say, these two Things greatly retard the Cure of their Distempers; for nothing hinders the uniting or healing of Wounds more than Moisture and Motion, as may be experimentally found by any who have Cuts or Sores upon the Eyes, Lips, Joints, &c.

Too much Moisture and Motion hinder the healing of Wounds.

The *Greeks* account 47 Distempers of the Eyes.

There are about forty-seven Distempers reckon'd by the *Greeks* that affect human Eyes, but it is scarce worth while to mention them in this Place, because Brute Creatures are subject only to a few of them; and the Reason why Horses never have the

Why Horses do not squint.

Defect

Defect in their Eyes called *Strabiſmus* or ſquint-eyed, is, becauſe their Eyes are a good Way aſunder, and ſufficiently parted or ſeparated by the Prominency or bunching out of the Forehead. This, I ſay, keeps them in ſuch a Situation, that they cannot croſs one another, or, in other Words, Viſion is not performed *au travers*, as the *French* call it.

It may not, perhaps, be amiſs, if I ſay ſomething of this unſeemly Diſorder of the Eye, altho' the Creature I treat moſtly of in theſe Pages be not ſubject to it.

Squinting, what it proceeds from.

A *Strabiſmus* or *Straboſity* is a Diſtortion of one of the Eyes, or both in reſpect to one another, or a Tranſverſe Viſion commonly call'd Squinting. It proceeds from an unequal Action of the Muſcles of the Eye. Infants eaſily contract this Diſtemper, ſometimes by Neglect of the Nurſes who place the Cradle in an ill Poſture towards the Window, or letting the Child wear peaked Caps which come over the Forehead.

Young Perſons alſo fall into this Diſtemper, either by an ill Uſe of their Eyes, or by Contagion, to wit, by looking upon others troubled with the ſame Diſorder. So that from hence it may be judged how improper it is to put out a Child to a ſquinting Nurſe, or to let them play with Children who have this Defect; for they are almoſt ſure to learn it, eſpecially if they keep Company for any conſiderable Time with others who ſquint. And it is the ſame as to ſome other Habits, which are eaſily (and as it were without our Knowledge or Obſervance) acquired; more particularly the Defect of Speech called Stammering, which is often communicated from the Parent to the Child, from one Child to another, and from the Tutor to his Pupil, and when once this Defect is acquired, it is hard to be removed, becauſe it requires Time and Perſeverance, and is not done, but by accuſtoming one's ſelf to a quite contrary Habit. For, as Stammering proceeds from a too haſty Pronunciation, or putting

The Defect of Stammering accounted for, and its Cure.

one's Words too close or crowded, it is (like all other Diseases of the Body) to be removed by its contrary, which is a slow and studied Utterance or Delivery of Speech. And so far I am satisfied that I could easily make any Person stammer, whom I kept Company with, provided they did not keep a good Guard upon themselves, and were apprized of the Trick before-hand.

Squinting cured.

Squinting may be easily cured, if the Person will only consent to wear a Mask over the Forehead, with two Pieces of Leather, or any Thing set to it in the Shape of Pipes or Tubles, about three or four Inches long, to look thro' in the Day-time, and in the Night to have the Eyes tied up with a Handkerchief: But then this Method must be pursued for some considerable Space of Time, otherwise there will be a Relapse, and according as the Defect has been of a longer or shorter Date, so does it require a Continuance of the Use of the Mask.

I have sometimes ordered a very large Nose of Pasteboard to be fixed to something over the Forehead, which has entirely cured People of Squinting, for the main Business is to keep the Eyes parted sufficiently, so that they may not (as it were) cross one another, by the Right Eye's looking at an Object upon the Left, and the Left Eye upon one on the Right Hand: Therefore 'tis best not to look upon an Object even before you, when troubled with this Defect, but rather to turn the Head a little sideways; for the Nose must be an exceeding big one to part the Eyes in two, if one look upon an Object right forward.

I shall now proceed to give my Opinion of Colds, or what the Farriers term *Morfoundring*.

CHAP.

CHAP. XVIII.

Of Colds, or (what Farriers call) Morfoundring.

THE Word *Morfondre* in *French* ſignifies Cold upon Heat, and therefore our Farriers retain the Term, as Monſieur *Solleyſell* made Uſe of it, firſt; and would have us underſtand by it, that it is melted Greaſe, or a Foundering in the Body, as *De Grey* has it. But it is no other than this, to wit, when a Horſe has been rid hard, and heated, and cools too ſuddenly, ſo that the Pores of his Hide are conſtipated or ſhut in a haſty manner, inſomuch that the *Materia Perſpirabilis* is hinder'd from going off in the uſual Courſe. Therefore as the Lungs and Brain of Animals are, from their very Contexture or Make, moſt ſuſceptible of Impreſſion, the Enemy is fixed ſometimes upon the one, ſometimes upon the other of theſe ſo noble Parts of the Body. Morfoundring explain'd.

Mr. *Gibſon* ſays, that Cold or *Morfoundring* is a Stagnation of the Pores; but this Gentleman ſurely has not rightly underſtood what is meant by the Term. Indeed if he had ſaid that Cold is occaſion'd by the perſpirable Matter's (which ſhould have gone off by the Pores of the Skin) ſtagnating in the Body, I ſhould have agreed with him. But his next Remark makes ſufficient Amends for this Miſtake, when he ſays "that Colds are often occaſioned "thro' Neglect of rubbing off the Sweat after hard "Exerciſe, which ſtrikes a Chilline's and Damp "over the whole Body."

This is a very juſt Obſervation; and he who will not lend a helping Hand to rub a Horſe clean and dry, and cloath him up after he has rid him hard, in my Thoughts, deſerves to trudge on Foot rather than ever mount this uſeful Creature. But ſuch unthinking and careleſs Men there are, and ſtill I believe will be, who can ride a poor dumb Creature moſt unmercifully for twenty or thirty, nay, ſome-

times forty or fifty Miles together, without ever a Bait, and after giving him a genteel Lash or two over the Buttocks with their Whip, turn him over to the Care of a drunken lazy Fellow, who has no more Humanity than themselves, 'till such Time as they have occasion to mount next Morning. And, it may be, the poor Horse undergoes almost the same Fate for two or three Days successively, by which, if he had not a good deal of Meat in him, as the Saying is, before he set out, 'tis ten to one but he falls into some dangerous Distemper afterwards.

I must not omit what the last mention'd Author says with relation to the Air affecting Horses with Colds. He tells us, "that sometimes many of the "Symptoms will happen (I suppose he means "Symptoms of a Cold) when the Air is too much "rarified and thin; for by that Means its Pressure "is not sufficient to force the Blood thro' the small "Vessels of the Lungs, but will occasion a Stagna-"tion there, and cause a Difficulty of Breathing, "which will be accompained with a Cough, *&c.*"

Mr. *Gibson*'s Account of Colds erroneous.

Now any Man who has the least Notion of *Pneumaticks* or the Properties of the Air, may see that Mr. *Gibson* was ignorant of this Part of Natural Philosophy; for if he had not, he would have been quite of a different Opinion; because when the Air is most rarified or thin, it is then most elastic, or presses harder, or with more Weight upon all Bodies. And this may be easily seen by any one, (who has not had the Opportunities of seeing Experiments in Philosophy; if a Bladder half filled with Wind, and tied, be held near the Fire so as the Air within it may be rarified, how it will fill and stretch enough to burst out its Sides; or if he only observes the working of the Barometer, (or Quicksilver in the Weather-Glass,) he will find that when the Air is thinnest, (as Mr. *Gibson* calls it,) it then approaches the nearest to what we may term pure Air, and that therefore it is the most springy or elastick; and by its perpendicular Pressure at such Times, it forces

forces up the Mercury in the Tube, to the greateſt Heighs: So that in the Main, we have a greater Preſſure of Air upon the Surface of our Bodies, when the Air is thin, and not agitated by Winds, &c. than we can poſſibly have otherwiſe.

Furthermore, I ſay, that the Air within our Bodies, and no doubt but there is a conſiderable Portion,) bears an Equality with the Spring of the Air without; and when dirty foul Weather is coming on, the Air within our Blood-Veſſels muſt become leſs elaſtick, whereby the Blood moves more Slow and Languid; and it is then we feel thoſe wandering Pains of the Rheumatiſm, &c. ſo often complained of by old People of Fourſcore, whoſe Bodies are by conſtant Obſervation become good Weather-Glaſſes. But to return:

A Stomach-Cough.

I have ſaid that a Cold is Perſpiration obſtructed, and that it moſtly affects the Brain and Lungs; for Horſes are not ſo much ſubject to Diſorders of the Nerves which occaſion Coughing, as Man, yet they often have a Stomach-Cough, or, I would ſay, a Diſorder at the Stomach, which makes them cough much, and this moſtly proceeds from Worms, Bots, &c. lodged there, or a little lower in the Inteſtines or Guts.

The Cure.

The Cure of a Stomach-Cough conſiſts, in giving the Horſe ſuch Things as deſtroy Worms; theſe are *Mercurius Dulcis*, *Æthiops Mineral*, or the like: But if you give the firſt, let it be about a Drachm in Powder for a Doſe, mixed in a little Paſte, or rather ſome of my Cordial Ball, in an Evening; and the next Morning give him a Purge, of *an Ounce of Aloes*; *an Ounce of Cream of Tartar*; *and half an Ounce of Senna in Powder*; make this into two Balls with *Syrup* of *Buckthorn*, and give it the Horſe in the common Way. The *Mercurius Dulcis* and Purge ſhould be given once a Week for three Turns, and I think that may be ſufficient; but mind you never give a Horſe cold Water when he purges, for thoſe who do are meer *Ignoramus*'s, and cannot

give any good Reaſon for their Proceedings; only they'll tell you perhaps every Horſe will not drink warm Water, though I think there are few but will (with a little Oatmeal) drink ſufficiently: Yet if they ſtill refuſe, never fear letting them faſt, rather than oblige them with cold Water, for Reaſons too plain to be ſet down more than once; and I believe I have already made mention of them, under the Diſcourſe upon Purging, Bleeding, *&c.*

Æthiops Mineral is a very ſafe Medicine for the Worms, either in Man or Beaſt, but muſt be continued for ſome Time, at leaſt a Fortnight; half an Ounce a Day in ſcalded Bran, if the Horſe will eat it, if not, give it him in his Oats after they are ſprinkled with Water.

There is not any occaſion for Purging after the *Æthiops*, though there is after the *Mercurius dulcis*; for if you did not do this, you would in all likelihood raiſe a Salivation; for Horſes eaſilier ſalivate than Men, provided the Doſe is in Proportion, by Reaſon of the pendent Situation of the Head.

After the Uſe of Worm-Medicines, let the Horſe have ſome Stomachic-Drench given him, ſuch as the following.

The Cordial Stomach Drench.

Take Turmeric, one Ounce; Saffron, one Drachm; Long Pepper, two Drachms; Anniſeed, one Ounce: Powder all theſe, and mix 'em in half a Pound of Treacle, and a Quart of warm Ale, for a Doſe; which may be uſed thrice a Week, for a Fortnight.

Coughs frequently Epidemica.

It is very frequent for Coughs to be ſo epidemical or univerſal, that few Men or Horſes miſs having their Share, more or leſs, and this is owing to ſome peculiar Diſpoſition of the Air, which breeds ſuch Diſtempers; though I muſt frankly confeſs I am ignorant of the true Cauſe; that is, whether it be occaſioned from Inſects floating about in the Air, and carried from Place to Place by the Winds, (as a late Learned Author undertakes to prove;) or it is brought

brought about by the Air's being more or leſs impregnated with Nitrous Particles. I ſay, this is Matter of Controverſy; yet if we can but find proper Remedies for all Sorts of Coughs and Colds, it is, one would think, abundantly ſufficient, without entering into many frivolous and idle Diſputes, of which there is no end.

How to know whether a Cold be newly taken.

If you would know whether a Horſe has newly taken Cold, feel between his Jaws, and if there be no ſwelling of the Glands or Kernels of the Throat, you may ſuppoſe it has not been long upon him; likewiſe if he rattle in his Breathing, it is a Sign the Diſtemper is in its firſt Stage, or if (when he drinks) the Water comes more than common thro' his Noſtrils.

The Cure.

Bleeding is moſt proper in the Beginning of almoſt all Colds, ſeeing they are more or leſs attended with a Fever; for as the obſtructed perſpirable Matter cauſes a Commotion in the Blood, this Operation muſt certainly be very ſeaſonable, if (as I have ſaid) it be performed in the Beginning of the Diſtemper, before Nature has pointed out ſome other Way to diſcharge the Enemy.

Moderate Exerciſe next takes Place, which, along with warm Water and Oatmeal, and a few of my Cordial Balls, (as preſcribed in my Notes upon the *Pocket Farrier*) is, without any other Helps, the beſt Method of Cure.

Directions for feeding a Horſe in a Cold.

The Balls ſhould be given in the Quantity of two Ounces every Morning, when you take the Horſe out upon his Exerciſe, till ſuch Time as the Diſeaſe be quite conquered; though I muſt not omit adviſing the Reader, that warm Cloathing, eſpecially about the Head and Throat, very much contributes towards bringing the Diſtemper to a Criſis or a Head, which may be known from the Diſcharge by the Noſtrils: For Horſes differ from Men in this, that they do not cough up the *Pus* or Corruption by the Mouth, but throw it out all through the Noſtrils, and often make ſad naſty work in the Man-

gers, ſo that it is proper to fill the Manger with Straw; and when you feed a Horſe that has a Running at his Noſe, wipe it clean as well as his Manger; neither ſhould he have much Hay given him at once, for his Breathing (at this Time) will taint it, and bring on a Sickneſs at his Stomach, if he feeds upon it any Time together.

The Hay ſhould be exceedingly well ſhaked from Duſt, *&c.* and ſprinkled with Spring or River-Water a little; for I have found by Experience, that dry Hay prolongs this Diſorder, and hinders the Cold from breaking, as it is called, ſo ſoon as it would do otherwiſe.

Scalded Bran proper in a Cold.

Scalded Bran is alſo proper in moſt Colds, and this muſt be given (I mean put into the Manger) hot; for the Steam of it does not a little conduce towards a Cure, by ſetting the Noſe a running, from which Symptom a Horſe finds the firſt Eaſement; for till then he will be dull and heavyſome, and hang his Head into his Manger, and ſometimes run at his Eyes; which laſt is a ſure Sign the offending Matter affects the Brain.

As it is very likely that a Horſe which runs at the Noſe, muſt ſwallow with his *Oats* or Hay, a good deal of the *Pus* or corrupted Matter, it may be adviſeable (after the Diſtemper is gone off) to adminiſter a Purge. The following may be taken as a general one in this Caſe.

A Purge after a Cold.

Take Aloes Caballine, commonly called Horſe-Aloes, one Ounce; of Socotrine Aloes, half an Ounce; Glauber's Salt, one Ounce; Oil of Anniſeed, two Drachms; Syrup of Saffron, one Ounce: Beat theſe well together, and if the Maſs be ſoft, work into it a little Flour of Brimſtone, and give it the Horſe in two Balls.

This ſhould be repeated every ten Days, as the Horſe is able to bear it; though I think two of them ſufficient, unleſs he is very full of Fleſh. And

as

as I have ordered him to be bled in the firſt Stage of this Diſtemper, I muſt here again repeat the ſame Directions, to remind the Reader of ſuch neceſſary Evacuation; and that it be done to ſome Purpoſe, that is, not a Quart at a Time, but two or three Quarts, or rather more if the Horſe can bear the Loſs of ſo much; and there are few but will, ſeeing they have ſo great a Quantity in the Body as before obſerved; though if a good Quantity be taken away at two or three Operations, ſuppoſe every Day once; two Quarts the firſt Day, three Pints the ſecond, and a Quart the third, it is beſt of all. Bleeding moſtly neceſſary.

There is one Thing ordered by *De Grey*, which he tells us he had from a famous Marſhal or *French* Farrier, and that he held it the beſt Thing which can be preſcribed, (I ſuppoſe he means in the height of the Diſtemper;) it is this.

De Grey's Method for a Cold in the Head.

" Take a ſmall Quantity of freſh Butter, and " Brimſtone made into a fine Powder; work them " together well, till they become of a deep yellow " Colour; then take two long Gooſe-Feathers, and " anoint them with the Ointment to the very " Quills, on either Side; which done, roll them " in more Powder of Brimſtone, and ſo put them " up each Noſtril one; and at the But-end of the " Quills put a ſtrong Packthread, which muſt be " faſtened over the Horſe's Poll, like the Head-ſtall " of a Bridle; and then ride him up and down mo- " derately, for the Space of an Hour or longer, " and it will provoke him to ſnort or ſnuffle forth " of his Noſe and Head much of the congealed " Filth; then tie him to the Rack an Hour, after " which draw forth the Feathers, keep him warm, " and give him Maſhes and white Water, for four " or five Days."

Now for my Part, notwithſtanding the Encomiums *De Grey* is pleaſed to paſs upon this Method; I think the Butter and Brimſtone are ridiculous; for

there is not any Thing in either of them which provokes the Horſe to ſnort or ſneeze; therefore we are to attribute the Good (if any) it does wholly to the Feathers, which, by tickling and irritating the Olfactory or Smelling Nerves ſpread out in the Noſtrils, cauſes Sneezing: Yet in my Thoughts, there are ſeveral Things may be thought of, under the Tribe or Claſs of Sternutatories or Sneezing-Powders, that will anſwer the End better, and with much leſs Uneaſineſs than the Gooſe-Quills.

Sneezing, how occaſioned.

How a Medicine occaſions the Convulſive Motion term'd Sneezing or Snorting, in Brutes as well as Human Creatures, is not at all difficult to underſtand: For the Fibres and Membranes within-ſide the Noſtrils are extremely ſenſible: Whatſoever therefore ſtimulates them, makes them contract, and thereby pull thoſe Parts they have any Communication with, which by Degrees brings on that general Convulſive Shake, that throws off the irritating Matter.

Every one's own Experience demonſtrates, and beſt explains to himſelf, how this is produced; and likewiſe manifeſt the great Influences which may be communicated over the whole Body, by the Communication of Fibres, from an almoſt unheaded Senſation upon the leaſt Part.

The Salutary Effects of this forcible Concuſſion of the whole Body, are very conſiderable. There are many Glands or Kernels about the Head, deſtined for the Separation of very viſcid and mucous or ſlimy Subſtances; by which Means many *Sinus's* or Cavities of ſome Service in the Animal Oeconomy, are frequently ſo ſtuffed with ſuch Matter, as not to give that Room to ſome of the Veſſels, as it is their Office to do; whereby the Circulating Fluid in ſome Parts makes them too turgid or full, which upon many Accounts will occaſion uneaſy Senſation, Pain, Giddineſs, and other Diſtempers, frequently experienced in the Head.

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By a particular Conformation, the Noſe receives and diſcharges many ſuch ſuperfluous Viſcidities or Foulneſſes. Therefore a *Stimulus*, from what we call Sternutatories or commonly Snuff, will provoke thoſe Parts to encreaſe ſuch Diſcharges, whereby a troubleſome Load of Matter is drawn off, and the Head rendered briſk and lightſome.

But, beſides the Benefit the Head receives from ſuch a Diſcharge, the whole Conſtitution or Frame of the Body is likewiſe ſo ſenſibly affected, that in many Caſes it is of Uſe as an Exerciſe; and there is no Motion whatſoever, even not that of Vomiting, (though Horſes ſeldom vomit,) which ſo ſuddenly and forcibly ſhakes the whole Nervous Syſtem. So that in all Obſtructions of the finer Paſſages, particularly of the Nervous Fluid, whatſoever produces Sneezing muſt be of great and ſingular Advantage. And common Experience and Practice confirms this in many Inſtances of Paralytick, Apoplectick, and Lethargick Caſes; where this Motion rouſes, and enlivens as it were, the ſluggiſh Spirits, and by ſhaking the moſt remote Fibres, aſſiſts their proper Juices in Circulation, which before ſeemed to ſtagnate, or not to irritate the Fibres enough to maintain the natural Elaſticity: And of ſuch great Efficacy is this Convulſive Motion, that it is ſometimes procured (in Human Bodies) on purpoſe to forward Delivery, and with good Succeſs.

The Folly of accuſtoming one's ſelf to taking Snuff.

How far the Cuſtom of taking Snuff is ſerviceable or detrimental, is not directly to my preſent Purpoſe to determine; but thus far it may not be amiſs to inform thoſe who comply too much with it as a faſhion, that they thereby put it out of their Power to receive any Benefit from ſuch Things as a Medicine, whenſoever there may be occaſion for ſuch Helps: For continually ſtimulating thoſe Parts with ſo pungent Snuffs, makes them by Degrees grow as it were callous or hard and horny, and much leſs ſenſible, which all Snuff-takers experience; being not provoked to Sneezing, if they take ever ſo much,

when

when one Pinch of the ſame would immediately operate upon a Stranger to it.

There is another Inconveniency alſo from this Practice, and that is ſpoiling the Appetite; for moſt of the common Snuffs are Tobacco of one kind or other, whereof ſome will paſs down the Throat into the Stomach, eſpecially in thoſe who take much; whence it deſtroys their natural Appetite, as many of them confeſs to find by Experience, altho' they cannot be prevailed upon to leave it off. But for ſuch who imagine continual taking Snuff to be neceſſary or beneficial for them, many Things in liquid Forms would much more properly anſwer their Intention; ſuch as *Sal Volatile Oleoſum*, diluted with ſomething proper, as Spirit of *Lavender*, or the like, where it is of itſelf too ſtrong. But it is to be feared no ſalutary Regard can obtain ſuch Reformation, unleſs that Idol *Faſhion* would vouchſafe a Sanction thereto. Now to return.

A Cold in the Head.

If a Horſe has a Cold in his Head, I think it may moſt eaſily be known from the rattling Noiſe he makes in Breathing; and it is my Opinion, that Patience and warm Cloathing are very requiſite in this Caſe, by reaſon the Matter of the Diſtemper requires Time to aſſimilate or gather together in ſuch Quantity, as that it may, with the greateſt Eaſe to Nature, be diſcharged thro' the Noſe. But we are ſuch uneaſy Mortals, that we have not Patience to wait Nature's Leiſure, but rather force her beyond her beneficent Deſign; inſomuch that the Diſorder is often protracted, to the no ſmall Danger of the Sick.

The Cure.

I ſay then, let the Horſe's Body and Head be well covered with Cloaths for a conſiderable Time, and when his Noſe begins to diſcharge ever ſo little, it is proper to blow thro' a Quill up his Noſtrils ſome of the following Sneezing Powder, which may be repeated twice or thrice a Day, till the Running gradually ceaſe; all which Time let him have warm

Water

Water and Oatmeal, with Maſhes and ſprinkled Hay, as before adviſed. The Powder is this.

The Sneeſing Powder for Colds in the Head.

Take of the Leaves of the Herb Aſara Bacca *dried, half an Ounce; white Hellebore, one Drachm. Powder them well, and keep them in a Bottle cloſe ſtopp'd, for Uſe.*

The true way of curing Colds.

There are a Number of *Recipe*'s for Colds, both in *Solleyſell*, *Blundevell*, *De Grey*, Mr. *Markham*, and Mr. *Gibſon*; but as I have look'd them over, I think they are not any of them worth tranſcribing, or giving my Opinion upon: For Bleeding, Exerciſe, good Dreſſing, warm Cloathing, proper Feeding, as before ſpoken of, will, along with the Uſe of my *Cordial Ball* hereafter preſcribed, perform a Cure; unleſs the Cough be a Conſumptive one, or that the Glandules or Kernels, called *Pituitary* or Phlegmy, ſituate about the upper Part of the Jaws and Throat, be much infected. Here follows the *Cordial Ball*.

The Cordial Ball for Colds.

Take Aniſeed, Caraway Seed, and greater Cardamons finely powder'd, each one Ounce; Flower of Brimſtone, two Ounces; Turmerick in fine Powder, one Ounce and a half; Saffron, two Drachms; Sugar-Candy, four Ounces; Spaniſh Juice diſſolved in Hyſſop-Water, (or for want of ſuch, Rain-Water will do,) two Ounces; Oil of Anniſeed, half an Ounce; Liquorice-Powder, one Ounce and half; Wheat-Flour, a ſufficient Quantity to make it up into a ſtiff Paſte by beating all the Ingredients well in a Mortar.

I have not made any material Alteration in this *Cordial Ball* from my Preſcription in the *Pocket-Carrier*, ſeeing I could not do it to Advantage; only when the Maſs grows dry by keeping, it may be proper to beat it up again with ſome ſweet *Florence*

rence-Oil, which will keep it moiſt a long Time together.

I need not enter upon any Encomium upon the Properties or Effects of this *Cordial Ball*, ſeeing I have done it ſufficiently in my Notes upon *Burdon*; only this I muſt ſay farther in favour of it, to wit, that it contains all the proper Ingredients fit for a Cordial Drench, as the Farriers term it; ſo that you have only to take the Bigneſs of a Hen's Egg of it, and diſſolve it in a Pint of White-wine, or for want of that, a Quart of Beer, and give it the Horſe, as Occaſion requires.

Mr. *Gibſon*'s Decoction to prevent Running at the Noſe turning to the Glanders, cenſured.

Before I cloſe this Chapter, I ſhall only take Notice of a Preſcription of Mr. *Gibſon*'s, in his Book of *Farriery*, Page 90, to wit, that "if you make "a Decoction of *red Roſe Leaves*, *Pomegranate* "*Bark*, and *Diaſcordium*, and ſyringe it up the "Noſtrils pretty often, it will hinder its turning "to the Glanders; and that Honey of *Roſes* will "do the ſame."

Now I am ſatisfied, neither of theſe will be of any real Service more than warm Water, nay, perhaps they may not be ſo good; for the Intention of the Preſcription is as an Aſtringent, ſo that it will lock up and ſtop the proper Diſcharge from the Glands about the Throat, that is, if the Syringe throw it up ſo far: But I am of Opinion it can ſcarcely be injected ſo as to reach the Cauſe of the Diſtemper, therefore it favours more of Sound than Senſe.

CHAP. XIX.

Of Cheſt-Foundring, and broken-winded Horſes.

Cheſt-foundering, purſive, or

THE Word *Fondre* in *French* ſignifies to melt or liquify, and therefore the ancient Farriers would have us believe that the Horſe's Greaſe is molten

nolten when he is Cheſt-founder'd; but this Term is very dark and abſtruſe, foraſmuch as a Perſon cannot form any true Idea of the Diſtemper from it. Broken-winded and Conſumptive Horſes.

Moſt Authors agree in this, to wit, that Cheſt-foundering proceeds from too hard Labour, whereby the Horſe becomes ſurfeited; ſo that in the main it is no more than a ſevere Cold, and therefore to be managed accordingly.

The Signs of this Diſtemper are a ſtaring Coat, and Heaving of the Flanks more than common. Mr. *Gibſon* mention ſtarting with Pain as often as we offer to move, to be one of the Symptoms of Cheſt-foundering: But I imagine that Author had form'd ſuch a Notion of this Diſorder as might lead him into the Miſtake, for I could never obſerve ſuch ſtarting with Pain, *&c.* more peculiar to the Cheſt-founder'd Horſe than any other. Signs of Cheſt-foundering.

In the firſt Place, I recommend Bleeding according to a Horſe's Strength, Age, *&c.* to eaſe his difficulty of Breathing; but as to the Opening the blank Veins, or thoſe on the Inſide of the Thigh, to make Revulſion, (as Mr. *Gibſon* adviſes,) I don't believe there is much in it, for Reaſons before aſſign'd under the Term *Revulſion*. The Cure.

As Cheſt-founder'd Horſes are moſtly Coſtive, and of a hot and dry Habit, ſoft Food is moſt proper, I mean ſuch as will give the Stomach leaſt trouble (if I may be allowed the Expreſſion) to digeſt it; ſuch is *boil'd Barley*, *Oats ground rough*, *warm Water*, with a good deal of *Oatmeal* in it, and the like: What I mean by warm Water, is a little Quantity of cold Water, to which you may add a little hot Water, ſo as to make it Milk-warm; for if a Horſe be uſed to Water more than juſt warm, he will not drink any cold for ſome conſiderable Time afterwards. Uſing a Horſe too long to warm Water, an ill Cuſtom.

I cannot ſee any Occaſion for Clyſters, unleſs the Horſe is (according to the Farriers Term) burnt up in

in his Body; if ſo, indeed, he may have the fo lowing.

An excellent Clyſter. *Take Pellitory of the Wall, and Mallow-Leave each three Handfuls; Fenugreek Seed bruiſed, a Annifeed, each one Ounce. Boil theſe well in a Ga lon of Water to three Quarts; then add of the Ele tuary called* Caryocoſtinum, *two Ounces; (which you may buy for about four Pence per Ounce,) a three Ounces of common Oil*; for 'tis not materi what Oil it be that is uſed in Clyſters, ſeeing t Part into which they are injected will make Diſtinction between Florence-Oil and comm Plaiſter-Oil.

If you add a little common Salt, it will cauſe t Clyſter to operate ſooner, by the pungent Partic irritating the inner Membranes of the *Rectum* Straight-Gut, and promoting that vermicular M tion of the Inteſtines called *Periſtaltick*.

I cannot preſcribe any Thing better than t *Cordial Ball* to be uſed thro' all the Stages of t Diſtemper, which will, with the Method abo good clean Hay, warm Cloathing, and lying w litter'd up in a large Stall, with the Help of m derate Exerciſe (for ſome conſiderable Time) reſt the Horſe to Health and Vigour.

A grand Miſtake among Farriers. There is very often a grand Miſtake among F riers, to wit, that when the Horſe goes with mu Pain and Uneaſineſs about his Shoulders and f Parts, they conclude him founder'd in his Bod whereas 'tis ten to one the Cauſe of ſuch pain Movement lies in the Hoof, and is what theſe I lows call *Hoof-foundering*; tho' the Word *H founder* is Nonſenſe if render'd into our Langua which would be *Hoof-molten*; and that there is ſuch Quantity of Greaſe in a Horſe's Hoof wh by it can be molten by hard Exerciſe, ſo as to ſerve the Name of *Hoof-founder*, I need not b the Pains to explain. Therefore I ſhall ſhew

Noti

ptions of what the Farriers term *Hoof-founder*, ien I come to treat of the Diſeaſes of the Hoof.

Broken Wind and *Purſiveneſs* in Horſes is what in man Creatures we call *Aſthmatick* and *Phthiſicky*. The Cauſe of Purſiveneſs and broken Wind pro- ds from Surfeiting, hard Exerciſe upon a full lly, Riding a Horſe into Water when he is hot and eats; and laſtly from obſtinate Colds ill cured. Broken Wind and Purſiveneſs. The Cauſe.

I need not be tedious in enumerating the Signs Symptoms of Purſiveneſs, and broken Wind, by ſon every one may eaſily perceive the Diſorder, a Horſe be only trotted ſharply to and fro'; for is a frequent, difficult, and ſhort Reſpiration, ned with a kind of hiſſing or whiſtling Sound, and Cough, eſpecially after drinking cold Water. And orſes are, in this Particular, more liable to Pur- eneſs than Men are to Aſthma's, becauſe their one Poſture occaſions the Guts to preſs continually ainſt the *Diaphragm* or Midriff, which of Con- quence muſt hinder the Lungs from expanding mſelves, or in other Words, they are expanded ſtretched with more Difficulty than in Man, who n a perpendicular or upright Poſture. And that s is the Caſe, thoſe who are Aſthmatick find by perience, that when they go to Bed they breathe h greater Trouble, and are obliged to lie high th the Head, that the Bowels may not preſs the driff againſt the Lungs, and hinder their Ex- nſion. The Signs.

I cannot ſay, but it is ſomething difficult for a ſon (not ſkilled in Diſtempers) to diſtinguiſh be- een a purſive Horſe, and one which has newly en Cold: But if he only take Notice, that upon otion there will be a hiſſing whiſtling Sound, and ater Heaving of the Flanks than in common lds, he will eaſily know the Difference. Beſides, Cough does not ſound ſo deep in Purſiveneſs, on the contrary is a ſhort tickling one, as if it re ſeated at the upper Part of the *Larynx* or Wind- e: tho' indeed it is ſeated moſtly in the Lungs, where, A difficult Matter to diſtinguiſh between a Cold and broken Wind.

where there are watry *Tubercles* or little Bladd
and often flatulent or windy Tumours.

A Hiſtory from *De Grey*.

De Grey tells us of a young Horſe he had un
his Care in a Conſumption of the Fleſh, (as he c
it,) which had been occaſioned, as he believ
from hard Riding after a Pack of Hounds, and
terwards ſuffering him to go up to the Saddle-Sk
in Water.

In fine, the Caſe baffled poor *De Grey*; but
open'd the Horſe when dead, and told his Own
that the Man who had the Nag in teaching to a
ble had given him the Diſtemper, by riding h
when hot into cold Water; for that the Horſe
ing very full of Fleſh, the Fat about his Bel
Briſket, Ribs, and Sides, was ſo caked, and h
den'd that it never could be diſſolved; therefo
he by ſlow Degrees dwindled off his Fleſh, and
laſt died.

Now this Account may to ſome People ſeem p
bab e enough; but I fear *De Grey* tells the Sto
too much in Favour of his own Abilities, when
would have us believe him almoſt a Conjurer,
gueſſing that the Ambler had rid the Horſe i
cold Water in the Circumſtances aforeſaid; n
did this *Farrier* know, perhaps, that there is
Difference between *Adeps* and *Pinguedo*; the f
ſignifying the ſoft fatty Subſtance, and the lat
what we call Suet, or the harder Part of the F
Therefore, in the Caſe *De Grey* cites, the ſoft fa
Subſtance was all conſumed, (as it really is in
conſumptive Caſes,) and nothing was left but t
Pinguedo or Suet, which, when a Horſe dies lea
is generally of a yellowiſh Colour, I ſay, this ma
De Grey form the whimſical Notion of the Horſ
Fat being frozen or congealed to ſuch a Deg
that the ſame never diſſolved again.

The Cure.

I am pretty well convinced that more Stir a
Noiſe is made about *Arcanums* and *Noſtrums* or Secr
for the Cure of Broken-Winded and Purſive Horſ
than there is any real Foundation for; yet there

) manner of Diſpute but ſuch Horſes may, by)od careful Management, be made of better Ser- ce, than otherwiſe they would: For Inſtance, let e Water you give them be, once every other Day, ıpregnated with half an Ounce of *Salt Petre*, and .o Drachms of *Sal Armoniac*, which will operate owerfully by Urine, and whatſoever does that, oſt certainly relieves Purſiveneſs in Horſes as well : Aſthma's in Men. The following is ſometimes ſed, and may do for a while, 'till you can jockey our Neighbour with a Broken-Winded Horſe in ieu of a ſound one.

Take new Milk, one Quart; Florence Oil, mixed with the Yolks of Eggs, four Ounces: give him his Blood-warm, and let his Hay be well ſhaked om Duſt, and ſprinkled with Water moderately; ecauſe if it is done over-much, he will take a Diſ- ıſte at it, but if it be done ſparingly, it adds to ıe Sweetneſs and Flavour of it. A Mixture for Purſiveneſs, &c.

A Horſe that is Purſive or Broken-Winded ſhould at what is of good Nouriſhment, and lies in a little oom; that is, he ſhould have more Corn than lay: For when a Horſe is obliged to fill his Belly ith Hay, he muſt drink a deal of Water to dilute , and make it fit for Digeſtion; this preſſes harder on the Lungs, &c. and adds to the Grievance. herefore, let ſuch Horſes have much Corn, and ttle Hay always ſprinkled, if you expect them to erform a Journey, and then their Lungs will have oom to expand and dilate themſelves ſufficiently.

De Grey tells a merry Story of a Horſe cured of urſiveneſs, which is as follows, "a certain Groom (no doubt a wife one) who had a Broken-Winded Horſe under his Care, kept him from drinking for two or three Days, giving him all that Time as much Hay and other Provender as he would eat; then he leaped upon his Back, and rode him to Water, where he ſuffered him to drink "his *De Grey*'s Cure for Purſiveneſs or Broken-Wind.

" his Fill ; then he clapped Spurs to him and gal-
" loped full Speed, 'till the poor Creature fell down
" for want of Breath, and lay for ſome Time as if
" he was dead ; as ſoon as he recovered Wind, the
" Groom gave him more Water, and galloped him
" a ſecond Time 'till he fell, and ſo a third ; (for
" no Number I ſuppoſe but an odd one would do
" with this Groom ;) well, when the Horſe had
" recovered his Wind a little, he fell to Coughing
" very much, (as well he might,) and by the Vio-
" lence of the Shake, caſt out of his Wind-pipe and
" Mouth, a Lump of congealed Phlegmatick Stuff
" of a good Bigneſs, after which the Gelding was
" freed from the Diſtemper."

This is what the laſt mentioned Author relates from a worthy honeſt Farrier, who had it from the very Groom himſelf who performed the Cure ; but in my Opinion, the Story has need of better Atteſtation ; though if I had ſeen the Thing done myſelf, I ſhould never adviſe any one to put it in Practice.

As I have ſaid before, a ſpare Diet and that of good Nouriſhment is moſt proper for ſhort, thick or broken-winded Horſes ; and Graſs is beſt of all, eſpecially ſuch as does not make them grow big in the Belly, as is the Nature of ſome kinds of coarſe Benty Paſtures. So that by Care and Management, a Perſon may make a Horſe perform tolerably well, though he is Thick-Winded ; but if he is not otherwiſe a valuable one, I think it is a great Folly to keep tampering with him, for indeed there is no End on't ; therefore it is in vain for me to think of any Method of Cure, otherwiſe than as before ſet down, ſeeing I have no Faith in any of the long *Farrago* of Recipes contrived for ſuch Purpoſes ; and whoever lays out his Money upon the *certain and infallible Cure for broken-winded Horſes*, had much better keep it in his Pocket, towards purchaſing another Horſe, ſince that in preſent Poſſeſſion is not likely to do him much Service. Yet I am appre-

apprehenſive, that all I can ſay againſt giving Medicines for the Cure of Broken-Winded Horſes, will not have its due Weight; becauſe I know there are many who give Credit to every Thing they ſee writ down, provided there is *Probatum eſt* at the Cloſe of the Receipt. But the Family of the *Wrong-Heads* is, and no doubt will be, a very numerous one, while the World endures; and there will be ſtill more Fools than Philoſophers, though there were twenty greater Men than Sir *Iſaac Newton*, yet in Being to inſtruct them.

Mr. *Gibſon* orders a Ball made with *Gum Galbanum*, *Ammoniacum*, *Burdock-Root*, *Flowers of Benjamin*, and *Sweet Oil*, to be given four Ounces a Day at twice; and I cannot ſay but the Compoſition is a good one, though there is not in the *Burdock-Root* much of a Pectoral Quality: But, according to my Thoughts, this Ball would ſtand in five or ſix Shillings a Day, at the Rate *Galbanum*, *&c.* now ſells. Therefore, unleſs the Horſe be a valuable one, I believe no Perſon will beſtow ſo much Money upon him when Purſive, eſpecially when there is ſo little Hopes of a Cure, according to our beſt Accounts and Obſervations. Mr. *Gibſon*'s Ball for Broken-Winded Horſes.

I ſhall now proceed to a Deſcription of the *Glanders*, which the Farriers term *Mourning of the Chine*.

CHAP. XX.

Of the Glanders, or Mourning of the Chine.

I Cannot deſcribe the *Glanders* better than Mr. *Gibſon* has done, to wit, "that it is a Flux or "Running of corrupt Matter from the Noſe of a "Horſe, which Matter is of different Colours; as "White, Yellow, Green, or Black, according to "the Degree of Malignity, or according as the "Diſtemper has been of long or ſhort Continuance." The Signs.

Our

Our ancient Farriers treat very oddly of this Diſeaſe, imagining the Seat of it ſometimes in the Lungs, at other Times in the Brain, *&c.* and particularly *De Grey* tells us, " that before a Farrier " can perfectly cure the *Glanders*, he muſt free the " Horſe from manifold and ſundry Diſeaſes, which " accompany them; ſuch as Conſumption of the " Fleſh and Lungs, Griefs and Aches in the Head, " Inflammation under the Joul, Diſeaſes in the " Liver, Purſiveneſs, Hide-bound, Dropſy, Swell'd " Legs, *&c.*"

Now out of all theſe, I know but one inſeparable Sign of the *Glanders*, to wit, Inflammation or Swelling of the Glands about the Throat, and behind the Ears. And as to what Monſieur *Solleyſell*, *Blundeville*, and others, write about the *Mourning of the Chine* or Conſumption of the Brain and Spinal Marrow, which runs all through the *Vertebræ* or Bones of the Neck, Back, Loins, *&c.* it is a Pack of Nonſenſe; though indeed we have a Diſtemper in Human Bodies which goes by the Name of *Tabes Dorſalis*, and implies a Waſting or Conſumption of the Spinal Marrow: But I believe this Term was moſtly in Uſe when the Knowledge of Phyſick was in its Infancy: For, what the Ancients ſuppoſed to be a Waſting of the Marrow in the Back, was nothing more than a *Gonorrha a Simplex* or *Simple Gon.* without any Virulency, or Infectious Quality in the Running; and the Pain in this Caſe moſtly affecting the Loins, they therefore judged the Marrow to be waſting: But to return to the *Glanders* in Horſes.

I take Mr. *Snape*'s Account of the *Glanders* not to be very defective; only I cannot agree with him in one Thing, that is, in this Diſtemper's being contagious or infectious; for he might as well ſay that we catch Colds, Conſumptions, *&c.* by Infection: No; what made him as well as others believe this Diſeaſe of an infectious Nature, was the epidemical Conſtitution of the Air, which, more at ſome particular Times than others (as we find by daily Expe-

Experience,) ſubjects Men, Horſes, &c. to Colds or Rheumy Diſtillations upon the Brain, Lungs, *Fauces* or Jaws, and ſo forth: And whenſoever this happens, they do not all begin at one Time, but one after another, according as the Blood and Humours are in a State to receive the Infection from the inſpired Air; and really in all Colds, one ſhould guard as much as poſſible againſt the *Glanders* or Induration, and hardening of the Glands or Kernels about the Throat; and this may be done in the following Manner.

The Cure.

As the *Glanders* ſeems to be an Affection of the Glands of the Throat, whether from catching Cold, unwholeſome Food which renders the Blood poor and viſcid, or from the bad Conſtitution of the Air producing ſuch Diſorders; I ſay, let it be from any of theſe Cauſes, the Horſe muſt be managed in much the ſame Way: But the Buſineſs is to take the Diſtemper in its firſt Stage, and nip it in the Bud: For, after the Matter or Running has acquired a malignant and corroſive Quality, whereby the ſoft ſpungy Bones in the Noſe are become *carious* or rotten; (which may be known from the ill Colour, Smell, &c.) when this is the Caſe, it is paſt Remedy, or at leaſt the Remedy is worſe than the Diſeaſe.

Diet for a Horſe in the Glanders.

In the firſt place, the Horſe is to be kept very warm, and fed with clean good Food; as ſweet well ſhaked Hay, Oats ground, and ſome of the rougher Seeds taken out, Maſhes and the like, with a continued Uſe of warm Water and Oat-meal, for ſome Time; and of the latter, to wit, Oat-meal, be not too ſparing; for the *Glanders* are occaſioned oftentimes thro' Poverty, and Lowneſs of Fleſh. Therefore, *as Diſeaſes are cured by their Contraries*, what affords good wholeſome Nouriſhment, and adds Spirits to the Blood, muſt undoubtedly be of Service in this Caſe.

Bleeding proper in the Beginning of the Diſtemper,

Secondly, Bleeding is proper in the Beginning of the Diſtemper, that is, before the Humours have

too far affected the Glands or Kernels about the upper Part of the Wind-pipe; though indeed many Horſes are affected with Swellings of the Glands of the Throat, while they are at Graſs, eſpecially in Winter, which continues long upon 'em before we ſee them, or any proper Care is taken; inſomuch that they indurate or harden, and would turn out like a boiled Potatoe; and when thus harden'd, they are unfit to perform Secretion. But here it may not be amiſs to ſhew the Reader the Form or Structure of a Gland, and then he may be the better qualified to judge of Glandulous Diſorders, which are really very numerous; and it is great Pity more Pains is not taken to ſet their Doctrine in a true Light; though of late Years we are better acquainted with their Structure and Mechaniſm, from peruſing the Works of the truly Ingenious Dr. *Keil* upon the Subject.

A Gland deſcribed.

The Ancients believed the Glands were as ſo many Ciſterns which contained certain Liquors, by which the Blood being fermented, threw off the Humours refined by the Excretory or diſcharging Ducts or Pipes: But as theſe Ferments muſt neceſſarily mix with the Blood, ſo they muſt be exhauſted, and carried off by the Blood into the Veins; and becauſe all the Liquors in the Body are ſeparated from the Blood, there muſt be another Ferment to ſeparate more: But this ſecond Ferment is as liable to the ſame Fate as the firſt; and therefore there muſt be an infinite Series of Ferments in the Body; which is abſurd to imagine.

If it ſhould be objected that the Ferments are not carried off with the Blood, they muſt be ſtopp'd by the Stucture of the Glands; but then there will be a Secretion without a Ferment, which is not the common Opinion.

Some think the Glands are Tubes whoſe Orifices differing in Figure, admit only Bodies of ſimilar Figures to paſs through them: But this (though a plauſible Conjecture) is demonſtrably falſe: For beſide

beſides that Liquors are ſuſceptible of all Figures, and that Bodies of any Figure, and a leſſer Diameter than that of the Gland, will paſs through; and that even a Body of a ſimilar Figure, and equal Diameter with that of the Orifice of the Glands, may be preſented innumerable Ways, and not be able to paſs through, whilſt there is only one Way it can paſs.

All the Veſſels in the Body are Conical or Cylindrical.

I ſay that all the Veſſels in an Animal Body are Conical or Cylindrical, and conſequently there is no Difference in the Figure of their Orifices; for, the Preſſure of a Fluid being always perpendicular upon the Sides of the Veſſel that contains it, and equal at equal Heights of the Fluid, if the Sides are ſoft and yielding they muſt be equally diſtended or ſtretched out; that is to ſay, a Section perpendicular to the Axis of the Veſſel muſt be a Circle, and conſequently the Veſſel be either Cylindrical or Conical: And this is agreeable to the Accounts of the niceſt Anatomiſts, who tell us that a Gland is nothing elſe but a Convolution (or winding together in a Bundle) of ſmall Arteries, whoſe laſt Branches are Cylindrical, or which is the ſame thing, Part of an infinitely long Cone. A Gland therefore being nothing elſe but a Branch of an Artery, whoſe fartheſt Extremity becomes the Excretory Duct or diſcharging Pipe of the Gland, it is next to be known how ſuch a Structure can ſeparate from the Blood only ſome of its Parts, and how different Glands may ſeparate different Parts of the Blood.

If ſuch a Fluid then is to be drawn off, as conſiſts of the ſmalleſt Particles of the Blood, let that Orifice of the Gland, which is inſerted into the Artery of which it is a Branch, be ſo ſmall as to admit only the ſmalleſt Particles of the Blood, then theſe, and theſe only will enter this Gland, and the Fluid, which paſſes out at the other Extremity of the Tube or the Excretory Duct, muſt be ſuch as is required.

If the Particles of the Blood which are of the next Size or Magnitude are required to be separated, let the Orifice of the Gland be ſo big as to receive thoſe ſecond Particles, but ſmall enough to exclude all bigger Particles; then theſe ſecond Particles, together with the firſt or ſmalleſt, will enter the Gland: But becauſe the Liquor to be ſecerned or ſeparated is to conſiſt only of the ſecond Sort of Particles, that is, the ſecond Sort of Particles only are to flow out at the Extremity of the Tube or Excretory Duct; therefore we are to ſuppoſe that this Gland (which is only the Branch of an Artery, and differs in nothing from a common Artery, but in the Narrowneſs of its Channel.) has Branches which are big enough to receive the ſmalleſt Particles only, and carry them off into the Veins; ſo that as both Sorts of Particles move together along the Gland, the ſmalleſt Particles will paſs off thro' its Branches, and a Fluid conſiſting chiefly of the ſecond Sort of Particles, will arrive at the Excretory Duct or Extremity of the convoluted Tube.

Thus the Number of Branches may be ſo great, as to draw off moſt of the ſmalleſt Particles before the ſecond Sort of Particles arrive at the Excretory Duct; ſo that the Liquor to be ſecern'd or ſeparated may conſiſt of both theſe Sorts of Particles mixed together in any Proportion, according to the Number of Branches.

If a Fluid, conſiſting of a third Sort of Particles larger than any of the former, is to be ſecern'd, the Orifice of the Gland muſt be juſt big enough to admit ſuch Particles, and none bigger; and the Branches of the Gland muſt be ſmall enough to exclude the biggeſt Particles, and big enough to receive the leſſer: And according as the Number of Branches is either greater or ſmaller, the Fluid which runs out at the Excretory Ducts will conſiſt either of the largeſt Particles, or of all together mixed in any Proportion.

And

And thus we may underſtand how a Liquor thicker than the Blood itſelf may be ſtrain'd off from the Blood, if the Orifice of the Gland be ſo big as to admit Particles of any Sizes, and the Branches ſo numerous as to draw off the thinner Parts, before the thicker arrive at the Excretory Duſt.

I could farther illuſtrate this Theory by Diagrams, and ſhew more plainly how, and in what Manner, the ſeveral Humours of the Body may be ſeparated from the Blood, which muſt either be compoſed of ſo many Humours as are ſeparated from it, or otherwiſe it muſt contain a few Principles, which mixed all together form the Blood, and which, variouſly, combined, form the different Humours, which are drain'd from it; as a few Rays of Light, of different Refrangibilities, mixed all together, produce a white Colour, but variouſly combined exhibit all imaginable Variety of Colours. And it is not at all probable, that the Blood, in which we diſcern but two diſtinct Parts, ſhould be compoſed of near thirty ſimple Humours, for ſo many do the Glands ſeparate from it; Nor is it agreeable to that Simplicity which Nature conſtantly affects in all her Operations.

An Obſervation upon Light.

The Glands ſeparate near thirty ſimple Humours from the Blood.

The Principles of all Natural Bodies are ſaid not to exceed Five; and how prodigious is the Variety that reſults from their different Mixtures and Modifications?

If we ſuppoſe likewiſe but five Principles or different Particles in the Blood, their Combinations alone, with different Modifications and Proportions, will yield near as many different Humours as are ſeparated from the Blood. And it is Matter of Fact, that Urine, Sweat, Tears, *Saliva* or Spittle in Man, and what we call *Slaver* in Horſes, as well as the Milk in Human and Brute Creatures, are Compound Liquors, and that in each of them there are Parts common to all of them. And if the Compoſition of ſome other Humours of the Body, is not altogether ſo plain and apparent as in theſe I juſt mention'd, yet it does not follow from thence, that

they are not compounded, no more than that the Blood is not, because we do not perceive in it the several Humours which are separated from it by the Glands.

Since therefore the several Humours are form'd by the various Combinations of a few Particles which compose the Blood, and that each Humour is secern'd and separated by Glands placed mostly in some one Part of the Body, as the Gall which is separated in the Liver, and the Urine in the Kidneys; the Particles of Blood must fall into such Combinations as are fit to form Gall in the Liver, and Urine in the Kidneys, and so of the others: And if this was not the Case, the Glands could never separate such Humours from the Blood. And as all the Humours are composed of a few different Particles, the greater will be the Number of Particles combined to form Bile, and the greater Quantity of Bile will be separated, the fewer there are of all other Combinations at the Liver. Such Combinations therefore as are fit to form the Humours proper to pass thro' the Glands, where these Combinations are form'd, being there only requisite, will be there most numerous: And therefore, wherever the Particles of Blood are most dissolved, there will be placed such Glands as separate Humours, which consist of the most simple Combinations, or of Particles which do the most easily combine: And at the greatest Distances from these will be situated the Glands which secern or separate Humours consisting of the most compound Combinations, or of Particles which do the most slowly unite. And between these will be all other Glands, which, according to either Extreme, will separate Humours more or less combined, or compounded of Particles which do more quikly or slowly combine together.

The Blood is most dissolved at and about the Heart.

By the Thinness of the Liquor in the *Pericardium* or Bag surrounding and inclosing the Heart, and that which passes thro' the Kidneys, the Particles of Blood seem most dissolv'd at and about the Heart.

For

For here we not only find the Effect of such Diſſolution in the Secretions, but likewiſe we are acquainted with the Cauſe of it, to wit, the Force of the Air in Reſpiration breaking the Globules of the Blood, which Force is demonſtrable to exceed the Preſſure of a Hundred Pounds Weight upon the Surface of the Lungs in a human Body, and much more in a Horſe, whoſe Lungs are far bigger than ours. Nor is it evident only from the Cauſes and Effects, that the Blood is here moſt diſſolved, but likewiſe from the very Methods which Nature takes to prevent the Effects of this Diſſolution in ſome particular Places at a little Diſtance from the Heart: For, the Bile or Gall, and Seed of Animals being thick Humours, compoſed of Particles which combine but ſlowly together, and it being requiſite they ſhould be ſeparated where the Liver and Teſticles are placed, Nature has made Uſe of particular Contrivances to give the Particles, which were to form theſe Humours, more Time to combine than they would have had otherwiſe, being ſo near to the Heart.

The Formation of the Gall.

For the Formation of the Gall, ſhe has contrived the *Vena Portæ*, and the Spleen; thro' the firſt the Blood moves near two hundred Times ſlower (and thro' the laſt altogether as much,) than otherwiſe it would have done; and that the Particles which form the Seed might have Time to combine, the Orifices of the Spermatick Arteries are contracted, and they likewiſe ariſe from the *Vena Cava* a little below the *Emulgents*, at a great Diſtance from the Teſticles, contrary to the common Courſe of Nature; by which Means the Blood is one hundred and fifty Times ſlower or longer in going to the Teſticles or Stones, than otherwiſe it would have been.

The viſcous Liquor of the Joints, where ſeparated.

At the greateſt Diſtance from the Heart, the viſcous Liquor of the Joints is ſecern'd; as alſo ſome other Liquors, which do not require any Combinations; as the *Lympha* or watry Humour which may be ſeparated any where. And all theſe different

Combinations which form ſo many diſtinct Fluids, ariſe from an attractive Power in the Parts of Matter, which, tho' it be equally diffuſed thro' the whole Maſs, yet according to the different Denſities of Particles, and the Figures of their Parts, ſome Sorts of Particles will be ſoon united, while others require a longer Time to be joined together; ſome will cohere or ſtick together more firmly than others, and Particles of one Kind will have a greater Tendency to unite with thoſe of another Sort, in a certain Portion of their Surface, than in any other. But leſt I ſhould tire the Reader, with theſe long Digreſſions, (tho' there is not any Thing more neceſſary towards a right Underſtanding of the *Animal Machine*, than a thorough Knowledge of the Structure and Uſe of the *Glands* or Strainers of the Body;) I now proceed to give ſome Account of the Cure for the Glanders, when the ſame is curable.

Sequel of the Cure for the Glanders.

I have already hinted, that good, clean, and eaſy digeſtible Food, warm Cloathing, along with Bleeding, *&c.* are proper in the firſt Stage of the Glanders.

Secondly, a continued Uſe of the following Mixture every Morning, for at leaſt a Month, will perform the Cure, if any Thing can touch the Root of the Diſtemper.

A Mixture for the Glanders.

Take a Pound of Balſam of Capiiba, (*commonly call'd* Capivi;) *incorporate it well with the Yolks of twenty freſh Eggs; then add to it a Pound of Treacle; and mix all in ſix Quarts of good ſtale Beer, and keep it cork'd in a Stone Bottle for Uſe. White-wine* is much better than *Beer*, if People will go to the Price of it.

Capivi Balſam is about 4s. *per* Pound, at the cheapeſt Hand.

The Baſis of this Mixture conſiſts in the Balſam of *Capivi*, which is an excellent and very penetrating Kind of Turpentine; and tho' there is a great Number of Turpentines, ſuch as the common, that ſaid to come from *Venice*, the *Chio* Turpentine, and all the Kinds of Pitch and Tar are of this Tribe; and

and laſtly, the Balſam of *Mecha*, or Balm of *Gilead*, call'd *Opobalſamum*; this laſt, to wit, the Balm of *Gilead*, is the fineſt Balſam we have; which, tho' of the Turpentine kind, yet is ſo dear that it cannot be afforded to Horſes of common Value, notwithſtanding a little of it will go a great Way. But ſeeing ſome Gentlemen may take it in their Heads to try a little of it upon a Horſe in the Glanders, here follows a Deſcription of it.

An Account of the *Balm of Gilead*.

The Balſam of *Mecha* or *Balm* of *Gilead* is a Reſinous Liquor or Balſam, which at firſt is of the Conſiſtence of Oil of ſweet Almonds, but by Age becomes like Turpentine, loſes much of its Smell, and grows blackiſh. When freſh, it is of a very agreeable Aromatick Smell, and taſtes like Citron-Peel. The Plant from which it flows is call'd *Balſamum Syriacum Folio Rutæ* by *Caſpar Bauhine* the famed Botaniſt. Monſieur *Lippi* was ſent by *Lewis* the Fourteenth of *France* as Ambaſſador to the Emperor of the *Abyſſines* in *Egypt*, where he was at great Pains to diſcover the Plant which produced this Balſam, and likewiſe the Manner of procuring it, which he at laſt did; and tells us, that there are three Ways of producing it. The Firſt is by Running of itſelf from the Tree; the Second by Inciſion, or cutting thro' the Bark; and the Third is by boiling the Tops of the Trees; and that the Balſam which riſes firſt, after a gentle Decoction, is very good, and much eſteem'd; but what is got afterwards is of the coarſer Sort, and of little Value. The firſt kind is ſent entirely to the *Seraglio* of the *Grand Seignior*; the other Sorts are ſuffered to be exported.

This Balſam is not now to be found in *Judea*, which was its ancient Native Soil, and were it was very common before the Deſtruction of *Jeruſalem*: But ſoon after that, the *Jews* deſtroy'd all their Trees, leaſt the *Romans* ſhould make Advantage of them.

At preſent it is found at *Mecha* and *Grand Cairo* in *Egypt*, from whence it is carried to *Conſtantinople*,

and is in very great Eſteem, inſomuch that the Grand Signior's Ladies uſe it as a Coſmetick or Beautifier of the Skin; but as they cannot do this with any Succeſs, I think they make uſe of it only as it has a fine Flavour, and is very ſcarce: (I mean the beſt Sort.)

The Scarcity and Price of this Balſam makes it ſometimes come to us very much adulterated, but when really genuine, no one Medicine can exceed it in opening Obſtructions of the Lungs, and healing Eroſions or Ulcerations from acrimonious and ſharp Humours. There is nothing exceeds it in Aſthma's and Pleuriſies, and whatſoever elſe requires Expectoration or Spitting. All inward Decays, as well as Bruiſes and Sores are relieved by it; and particularly thoſe of the Reins and Urinary Paſſages; for it very quickly paſſes off that way, and ſhows itſelf in the Smell of the Urine. In fine, it imparts a Healing and Deterſive Quality to the whole Maſs of Blood, ſo that nothing can be ſaid truly to exceed it in the Cure of inward Waſtings, *&c.* but it is ſo dear (as I juſt now ſaid) that very little of it is uſed; but the *Capivi* Balſam ſubſtituted in its ſtead.

If the Mixture with Balſam of *Capivi*, and ſyringing or waſhing the Horſe's Noſtrils well and often with warm Water and a little Honey of Roſes in it, do not give Relief in the Glanders in the Space of three or four Weeks, I adviſe he may be knock'd on the Head, and put out of his Miſery; for he cannot be ſaid to be curable: And altho' there are a Number of pretended Cures ſet down for this Diſtemper, in almoſt all Authors; yet I don't ſee any of them worth Notice, ſaving, that among Hands one may now and then give the Horſe a Quart of the Decoction of *Guaiacum* Wood, made as follows.

The Guaiacum Decoction for the Glanders.

Take of the Raſpings of Guaiacum, otherwiſe called Lignum Vitæ Wood, half a Pound; Raiſins, and Liquorice Root, each two Ounces: Boil theſe in ſix Quarts of River or Rain-Water to four Quarts; then

Expreſs

Expreſs or Strain it out ſtrongly, and give it Milk-warm a Quart every other Day for a Fortnight.

I need not tell the Virtues of the Lignum Vitæ Wood, or Gum of that Tree, in healing inward Ulcerations, or promoting inſenſible Perſpiration by its warm deterſive Quality, ſeeing the ſame is ſufficiently Experienced in obſtinate chronick Caſes; and if it promote Sweat it muſt be good in the firſt Stages of the Glanders, which are in my Thoughts oftener occaſioned from obſtructed Perſpiration, brought on either by hard Riding and Slaving the Horſe afterwards, or by repeated Colds in Winter Paſturage, than from any other Cauſe whatſoever, excepting ſuch as are Diſtemper'd from Foals.

Gonorrhœa or Clap cured by Injection.

I muſt own, that if Liquors could be injected ſo far up the Horſe's Noſtrils as to reach the Seat of the Diſtemper, ſuch Things would be very proper; in like Manner as we cure a Gonorrhœa or Clap in Human Bodies of either Sex, ſurely, ſafely, and in the leaſt Time, by Injection: But this is applying the healing Liquor to the very Parts affected, without ſuffering it to go the tedious Round of Circulation from the Stomach to the *Penis*; neither need any one be in the leaſt afraid of a Relapſe or locking up the offending Matter in the Body, (as the common Phraſe is;) for I have (with never-failing Succeſs) cured Gonorrhœa's by Injection for twenty Years paſt, unleſs I happen'd to have to do with a whimſical Fellow now and then, who would not be ſatisfied except he was continually taking Bolus's, and keeping a Correſpondence with the Cloſe-Stool. But to return to the Glanders in Horſes.

I ſay, if with a long and well contrived Syringe one could throw up the Liquor ſo far as to reach the parotid Glands or Glands ſituate at the upper Part of the Throat, it might be of Service; but I am afraid that will be hard to be done: However, for the Satisfaction of ſuch as have a Deſire to try,

I ſhall ſet down as proper an Injection as can be thought of in ſuch Circumſtances.

The Author's Injection for the Glanders.

Take Venice Turpentine, three Ounces; mix it very well with the Yolks of a Dozen Eggs; then add Honey of Roſes, ſix Ounces; Ægyptiacum Ointment, two Ounces; White Wine, one Quart. Mix and ſyringe it up the Noſtrils Milk-warm; but unleſs (as I juſt now hinted) you cauſe it to reach the very Part affected, it cannot poſſibly be of Service, farther than waſhing the naſty Matter out of the Noſtrils.

I have conſidered all the Kinds of Liquors prepared to be injected up the Noſe in the Glanders; but I take the above to be one of the beſt contrived Injections for the Purpoſe: And as to Myrrh and Aloes, as ordered by Mr. *Gibſon* to be mixed with theſe Liquors, there is little to be expected from them, whatever Notion ſome People may entertain of their ſpecifick Virtues in mundifying or cleanſing old Sores or Ulcers: For they are far inferior to the Turpentines, in Caſes where healing and deterſive or cleanſing Medicaments are indicated.

CHAP. XXI.

Of the Strangles, Baſtard Strangles, and Vives.

Strangles.

THE Strangles ſcarce need any Deſcription, by reaſon they are pretty well known to all; only I muſt take Notice, that this Diſtemper as ſurely happens to young Horſes (at one Time or other) as the Small-Pox does to Children; and it may well be compared to a Quinſey in Human Bodies, which is an Inflammation of the Muſcles, *&c.* deſtined for the Office of Swallowing; and a Tumor being formed, the Patient is often ſuffo-

cated

cated before the Matter is ſufficiently digeſted and diſcharged; which Diſcharge happens for the moſt Part on the Inſide of the Throat, by reaſon of the Thinneſs of the Skin in compariſon to the outward Skin, and in ſuch Caſe it is thrown up by the Mouth in Human, and through the Noſe in Brute Creatures.

Baſtard-Strangles.

The Baſtard-Strangles differ very little from the true, only the Degree of Inflammation is not ſo violent; and in like Manner, we make a Diſtinction between a True and Baſtard-Quinſey in Human Bodies.

There is one very good Remark in Mr. *Gibſon*'s *Farriery*, under the Chapter of the falſe and Baſtard-Strangles, which is this, "that when "Swellings about the Jaws and among the Kernels "happen to old Horſes, it is an infallible Sign of "a crazy Conſtitution, and is oftentimes the fore-"runner of the Glanders, unleſs ſuch Swelling has "been occaſioned by ſome Violence." I ſuppoſe by Violence he means over hard Uſage, and Surfeiting, *&c.* and farthermore he ſays (which I know to be very true) that "we may even obſerve in "Human Bodies, in all tender and delicate Habits, "the ſame Diſpoſition to Swellings in the Glan-"dulous Parts; but more eſpecially in thoſe that "are Conſumptive."

Vives happen to Horſes of all Ages.

The Vives, according to all Accounts differ little from the Strangles. The *French* call this Diſtemper *Avives*, though I cannot ſee any Derivation of the Word, ſo as to imply a Swelling of the Glands or Kernels near the Ear-Roots, for that Part is the ſeat of this Diſorder; and it happens to Horſes of all Ages; whereas the Strangles is moſt confined to young Horſes.

Swelling of the parotid Glands and Relaxation of the Uvula in

There is a Diſtemper in Human Bodies much like the Vives in Horſes, to wit, the Swelling of the parotid Glands behind the Ears, and Relaxation of the *Uvula*, which when it happens, the common People cry out their Ear-Roots are down, and therefore

Human Bodies compar'd to the Vives in Horſes.

therefore they immediately apply themſelves to ſome good old Woman who is ſkilled in ſtroaking them up again; and this Operation, together with a little Pepper and Milk, or Pepper and Bread and Butter, performs a Cure, according to their Way of Thinking; though they do not conſider that Friction or rubbing any Swelling upon a Glandulous Part (which is moſtly of a cold Nature, the Juices there being ſo far out of the common Road of Circulation) helps to diſſipate or diſperſe the Tumour; add to this, their being directed to keep the Throat and Ears well covered, which indeed conduces chiefly towards a Cure.

The Cure.

As all Swellings upon Glandulous Parts of the Body are a long Time in Suppurating, (or coming to a Head;) therefore *a great deal of Patience is required, leaſt by a too haſty Inciſion or Cutting them open, you cauſe the Wound to heal before the Humours to be diſcharged are ſufficiently digeſted and prepared by Nature*; and by this Means, you bring about two or three diſtinct Tumours, one after another, when one would have done the Buſineſs, provided you had been endow'd with the Gift of Patience, as before obſerved.

If the Swellings, (for I muſt put them in the *plural* Number, ſeeing ſeveral Glands are affected;) I ſay then, if the Swellings are recent, or of ſhort ſtanding, the Diſeaſe may perhaps be cured by the firſt Intention, which is doing it the neareſt Way, and not ſuffering the Humours to come to Suppuration; and for this End Bleeding, Purging with the Uſe of Emollient Clyſters now and then, are of Service: In General all Evacuations are neceſſary, but there are not near ſo many Ways to perform this in Horſes as there are in Men; for as Dr. *Baynard* (ſpeaking of Evacuation) in his *Decad* very humourouſly expreſſes it,

Piſs

Piſs,	Purge,
Spew and	Bleed and
Spit,	Bliſter,
Perſpiration and	Iſſue and
Sweat,	Clyſter,

" *In theſe Ten Words the whole Art is compris'd;*
" *For ſome of the Ten are always advis'd.*

I ſay, that Evacuation by Vomiting, Spitting and Bliſtering, are not, nor can properly be practiſed upon Horſes on every Emergency; neither ought any of the ſtrongly operative Medicines which promote Urine, be given to a Horſe in order to diſſolve Swellings about the Throat, Ears, &c. For as there is always more or leſs of a Symptomatick Fever attending theſe Tumours, (ſuch Medicines being moſtly of the Turpentine kind) the Fever is heightened and increaſed by them. Therefore thro' the whole Courſe of the Strangles, Baſtard Strangles, and Vives, let the Horſe be kept cloath'd, and more eſpecially his Head and Throat, and have White-Water and ſoft Food, and let the Tumours or Swellings be anointed with the following Ointment.

The firſt Ointment for the Strangles, Vives, &c.

Take Flanders Oil of Bays, half a Pound; Freſh Butter clarified, four Ounces; Crude Mercury or Quickſilver, one Ounce; Oil of Turpentine, one Ounce: Mix or incorporate the *Quickſilver*, with the *Oil of Turpentine* very well in a Gally-Pot, and then put it to the *Oil of Bays, &c.* which ſhould be ſtirred or wrought together a Quarter of an Hour, or longer, that the *Mercury* may be divided into as ſmall Globules or Particles as poſſible, and (when the Hair is ſhaved off the Swelling.) Embrocate or Anoint the Part with the Ointment for a good while; and by that Means the ſmall Globules of *Quickſilver* will penetrate the Pores of the Skin, and by their Weight add to the Blood's *Momentum* or Stroke againſt the Extremity of the Veſſels, inſomuch that (if any Thing will) this

this will diſſipate and diſſolve the Swelling by the Help of the *Oil* of *Bays*, &c. which ſoftens the Parts, and conſequently gives more room for the Blood and Humours to circulate, when by the Power of the *Quickſilver* as aforeſaid, a greater Weight is added to them. *For whatever Body is mixed with a Fluid (ſpecifically heavier than the Fluid itſelf) muſt add to the Weight of ſuch Fluid:* Thus Preparations of Iron, Mercury, &c. when mixed with the Blood add to its Weight, and conſequently to its *Momentum* or Pulſe; and by theſe Helps, Obſtructions, &c of the ſmall Veſſels are opened, and many Diſorders, proceeding from a ſlowly Circulating, Sizey Blood, are cured.

Preparations from Iron, Mercury, &c. Their Operation explained.

During the Uſe of the aforeſaid Ointment, the Horſe ſhould be purged with the common Aloes-Purge, before ſet down as a general Purge for Horſes; provided the Blood is not very feveriſh, which may be known from the Motion of it, by laying one's Hand near his Heart upon the near Side, (as it is generally called) and by ſo much as the Pulſes exceed the Number 40 in a Minute, (which is by Experience found to be the neareſt Calculation of the Syſtole's or Contractions of the left Ventricle of a Horſe in a healthful State;) I ſay, by as much as theſe Pulſations exceed 40 in a Minute, by ſo much is the feveriſh Heat increaſed; and if the Horſe is found to be feveriſh, (I mean to any Degree) for Example, if his Heart or the left Ventricle thereof Contract above 50 Times in a Minute, it may be ſuppoſed his Fever is ſo high, that Purging Medicines would be dangerous; for nothing of that kind can be given to any Animal, but it raiſes (for a Time) a Heat and Commotion in the Blood; therefore I ſay, forbear Purging a Horſe in any Diſtemper whatſoever, when his Pulſe beats above 50 Times in a Minute.

Purging Medicines dangerous, when a Horſe's Pulſe beats above 50 Times in a Minute.

To meaſure the Times a Horſes Pulſe beats in a Minute, a Stop-watch which runs Seconds, or a Minute Sand-Glaſs, as there are enough of them, eſpecially

How to meaſure the Times a Horſe's

eſpecially in the Maritime Towns; I ſay, either of theſe (in a good hand) will do, where a Perſon is not provided with a proper Pendulum for the Purpoſe. Pulſe beats in a Minute.

If the Tumours or Swellings will not give way to Reſolvents or ſuch Applications as open and looſen, then we are to try ſuch Things as will bring the Matter to ſuppurate or digeſt: And here it may not be improper briefly to explain what is meant by theſe Terms, to wit, Repellents, or ſuch Medicaments as drive back Tumours, *&c.* and Ripeners or Drawers, as they are uſually termed: For if a Perſon rightly underſtand when to apply either the one or the other of theſe, he will be far above the Reach of our common *Farriers*, who when they would draw the Matter to a Head, often through Ignorance apply Repellents, which (by driving back the offending Matter into the Maſs of Blood) raiſe new and freſh Tumults and Commotions, which too often endanger the Life of the Animal. And firſt,

By Repellents, I mean ſuch Medicines or Applications as prevent ſuch Afflux of Fluid to any particular Part, as would raiſe it into a Tumour or Swelling: But to know how this may be Effected, it will be convenient to attend to the ſeveral Cauſes which can produce a Swelling, or force out of the Veſſels any of their Fluid Contents, by ſome unnatural Diſcharge. Repellents, their Manner of Operation, explained.

All Tumours have neceſſarily one of theſe in their Cauſe, to wit, either an Increaſe in the Velocity or Quantity of Fluids, or a Weakneſs in ſome particular Part; and ſometimes both concur.

An Increaſe in the Velocity of the Fluids makes them puſh more forcibly againſt, and diſtend, all the Parts in their Circuit: If therefore any Part be unequally preſſed, or relaxed or looſed by external Injuries, (as is the Caſe of a Clap in the Backſinews of a Horſe,) that Part will be more elevated than any other; and for want of equal Reſiſtance with the Reſt of the Body, will at length receive ſuch Quantity of Fluid, as will raiſe it it into a Swelling, The Effects of an increaſed Velocity of the Fluids explained.

more

more especially if any of its Vessels be obstructed: Because the Protrusion of fresh Matter *à Tergo* will continue to add thereunto, until such Time as the Part be upon the utmost Stretch, and can hold no more.

In this Case all those Things are said to be Repellent, which check or stop the Growth of the Swelling, and assist the refluent Blood in taking up the obstructed Matter, and washing it along into the common Stream again. And this Intention is chiefly favoured by Evacuation and Revulsion. For *whatsoever lessens the Quantity of the Fluid in the Body, will diminish the Force of the remaining Fluid upon the tumified Part.* But it concerns us most to know with relation to the Strangles, *&c.* how external Application to the Part itself helps or assists in this Affair. And

Repellents sometimes dangerous.

Herein a Medicine comes to be a Repellent, by consisting of such subtile Parts, as may transmit some of them through the Pores, and help to render the obstructed Matter more fluid; so that it becomes the more easy to be softened, and fall again into the circulating Current: But in this Case there is a Hazard likewise of such Things putting the obstructed Humour into a Ferment, whereby it sooner turns into *Pus* or corrupt Matter, and then they are called Suppuratives or Ripeners.

What therefore in a strict Sense is to be reputed a Repeller, is that which astringes or binds together, (as it were) and strengthens the Part, so as to make it resist any such Lodgment of extravasated Matter, *&c* and these are such, whose Qualities are most manifest in their Coldness and drying Properties; but there are few Instances where Bandage or binding down the Swelling in a proper Manner is not much better than such Applications; therefore with the Knowing Part of Mankind) very few Medicaments come in Play for such Purpose; only in cutaneous or skinny Distempers, where the serous or thin Part of the Blood is too plentifully separated by

by the Miliary-Glands, ſo that it deforms the Skin, as alſo in ſome kinds of Hæmorrhages or Bleedings, Things of this Nature take Place; which anſwer ſuch Ends by aſtringing the Fibres, ſo that the Apertures or Openings are cloſed and do not admit any ſuch Fluid through them afterwards.

Some Things alſo anſwer this End by ſtimulating the Fibres of the tumified Part, ſo as to give them ſudden and forcible Twitches, whereby the Obſtruction is ſometimes looſen'd and ſhook (as it were) away with the refluent Blood; and ſuch a ſort of Motion as this will be occaſioned by the ſudden Application of any Thing extremely cold, as common Water, or the like: But this Practice is ſeldom ſafe; by reaſon if the firſt Efforts, which the Fibres are put upon by ſuch Means, do not ſucceed in breaking away the incloſed Matter, they will be ſtrain'd, and not afterwards able to repeat their natural Vibrations: The Conſequence of which is weakening the Part, and ſo the Tumour or Swelling will be ſtill more obſtinate.

Stimulants ſometimes operate as Repellents.

There are many other Means and accidental Circumſtances, which contribute to favour or retard this Way of Practice; I mean the Uſe of Repelling Medicines; but the Hints already given may, I hope, prove ſufficient: Therefore I ſhall now give an Account what is meant by Suppurative Medicines, or ſuch Medicaments as are generally ſtyled Ripeners or Drawers.

By Ripeners or Drawers I mean thoſe Applications which, by the Activity and Warmth of their Parts, are able to penetrate the Pores, and mix with, and rarify any obſtructed Matter, ſo that it may be render'd fit for Diſcharge upon laying open the Part by Cauſticks or Inciſion.

Suppurative Medicines, their Operation explain'd.

Now in many Inſtances, as the Matter by theſe Means rarifies, and grows more fluid, the refluent Blood is apt to waſh it back into the common Maſs; which ſometimes is of that Nature, as to do a great deal of Miſchief; or by making it take up more

Room

Room upon its Rarefication, occaſions it to diſtend the Parts in which it is contained more ſtrongly; whereupon a Senſe of Pain is excited, and thereby a greater Concourſe of Fluid, and conſequently a needleſs Increaſe of the Tumour or Swelling cauſed; ſo that Medicaments under this Denomination require to be in the Hands of ſuch, who are ſo well acquainted with the Mechaniſm of the Animal Oeconomy, as to be able to apply them to the beſt Advantage, and know how to avoid the Hazards which may ariſe from their Abuſe. Now to return.

I ſay, if the *Strangles* will not yield to Bleeding, Purging, *&c.* ſo as apparently to diſſolve away, then Poultices made of ſcalded Bran and freſh Hog's-Lard, mixed and applied warm, are as good as any Thing elſe which can be contrived for ſuch Purpoſe, notwithſtanding every Perſon may pretend to Secrets of the kind. But for the better Satisfaction of ſuch whoſe Heads run upon one particular kind of Poultice or Cataplaſm more than another, (I mean where ſoftening Things are indicated,) I ſhall ſhow how and in what Manner theſe Sorts of Applications operate: And, Firſt,

Emollients, or ſoftening Medicines, their Manner of Operation explained.

Emollients are ſuch Things as ſheathe and ſoften the Aſperity or Sharpneſs of the Humours, and relax and make ſupple the Solids at the ſame Time. And it is very eaſy to conceive the Manner how theſe Effects are brought about by one and the ſame Medicine.

Secondly, By what Means ſoever the Juices have obtained a Sharpneſs or Aſperity (and in the large Glands they are very ſubject thereunto,) ſo as to vellicate and render uneaſy the Fibres and Nervous Parts; thoſe Things which are ſmooth, ſoft, and yielding, cannot but (as it were) wrap up their Points, and render them imperceptible, inſomuch that they will not be able to cauſe Pains and uneaſy Senſations; and by this Means they may gradually (by the proper Courſe of Circulation) be brought

to

to ſome convenient Emunctory or Out-let, without doing any Injury by the Way.

Such Juices likewiſe draw the Fibres into Spaſms or Convulſive Twitchings, and keep them tence or upon the Stretch, ſo that Obſtructions of the worſe kind are frequently form'd.

In all ſuch Caſes therefore, *Emollients* lubricate and moiſten the Fibres, ſo as to relax or looſen them into their proper Dimenſions, whereupon *the Cauſe of the Grievance is removed, and the Diſorder ceaſes.* Now to return.

The Swelling of the Glands, in the Diſorder of the *Strangles*, *Vives*, &c. muſt be well embrocated or rubbed with ſome ſoftening Ointment, or Oil, ſuch as Ointment of Marſh-Mallows, commonly call'd *Dialthææ*, *Oil of Lillies*, or the like; warm theſe pretty well when you uſe them; but, where they cannot be had, I think ſweet *freſh Butter* may do well enough. However, before I quit the Subject of *Emollient* Applications, I cannot omit ſetting down an Ointment I have often tried (with great Succeſs) to diſſolve tumified or ſwell'd Glands in human Bodies, whether from (what is commonly call'd) the *Evil*, or from any other Cauſe whatſoever; and if it will do this in Man, it will do the ſame in Brute Creatures, only making it a little more penetrating, by reaſon of the Skin's being thicker in thoſe than in human Bodies; and this may be done by adding a little *Oil of Turpentine*, and *Spirit of Wine*, mix'd in equal Quantities. About a Tea Spoonful of this Mixture to an Ounce of the Ointment well incorporated together, will be ſufficient, with long Friction or Rubbing, to cauſe it to enter the Pores and diſperſe the Swelling, provided ſuch Swelling be taken in its firſt Stage, and before the ſtagnating Humours are become currupt.

The ſecond Ointment for the Strangles, &c.

The Ointment is this. *Take the Flowers of the Herb* Digitalis *or Fox-Glove, any Quantity; and ſtamp*

ſtamp or beat them well in freſh Butter, as ma as you can make the Butter take up; then ſet it in Pot in a Cellar for a Fortnight or longer 'till t Flowers are ſufficiently rotted in the Butter; wh this is done, boil it a while; then ſtrain and keep for Uſe.

This Ointment you muſt know was held as a pa ticular Secret with an old Doctor of my Acquain tance, who had a vaſt deal of Experience, I think at leaſt fifty Years, when he told me of it, an that he never found any Thing exceed its Virtues i reſolving Tumours of the Glandulous Parts, &c and he ſaid he had frequently cured Colts of hi own breeding by the Uſe of it, when the commo Means uſed by Farriers had fail'd; tho' I confeſs want Faith to think there is any more in this Oint ment than in others prepared for the like Intentions ſuch as the Ointment of *Marſh Mallows*, *Palm Oil*, &c. which act in the Manner before ſet down as *Emollients*.

If the Matter of the *Strangles*, *Vives*, &c. can be felt to fluctuate under one's Finger upon the Preſ- ſure of the Tumour, it is beſt to ſlit open the Swel- ling, according to the Direction of the Fibres, the whole Length of the *Sinus* or hollow Part, and dreſs the Wound with Dozels of Tow dipp'd in the following Ointment very warm.

The Wound-Ointment for the Strangles.

Take Roſin, and Burgundy Pitch, of each one Pound and half; Honey and common Turpentine, each eight Ounces; yellow Wax, four Ounces; freſh Butter boil'd and clarified, one Pound; Verdegreaſe of France *finely powder'd, one Ounce: Mix.*

Firſt melt the Roſin, Pitch and Turpentine to- gether with the Bees-Wax ſhaved in ſmall Pieces; then boil them up with the clarified Butter, and put the Ointment into a Pot that will abide the Fire, and ſtir in the Verdegreaſe by Degrees, till the whole

whole be pretty cool, that the Powder may not by its Weight ſink to the Bottom of the Pot; for if it do, the Ointment will be too abſterſive when it comes near the Bottom.

This Ointment may ſerve as a general Wound-Ointment for all Sores or Wounds in any Part of the Horſe's Body; for it will not eaſily ſuffer fungous, ſpungy, or proud Fleſh to grow, as is common when Ointments have too much Oil or Greaſe in their Compoſition: Yet if the Wound happen to put forth proud Fleſh, as is common to old Sores, you may waſh it with a few Feathers tied together, and dipt in the following *Phagedenic* Water.

Take of white Sublimate in Powder, two Drachms; diſſolve it in a Pint of Lime-Water, and it will turn of a yellowiſh Colour: Which keep in a Bottle for Uſe.

Water to eat away fungous or proud Fleſh.

The Lime-Water is prepared by pouring about a Quart of Water upon a Pound of quick or unſlack'd Lime, and when it has ſtood all Night, decant the clear Water for Uſe.

Lime-Water how to prepare it.

At the ſame Time the Wound is dreſs'd with the Ointment, the remaining Hardneſs, if any, in the Neck, may be anointed with the firſt Ointment as preſcribed for the *Strangles*, or elſe the Fox-Glove Ointment, to diſſolve it: For, if it is found, that amongſt the Glands all the Corruption is not diſcharged at once for want of Communication one with another, ſo that there often happens two or three Gatherings one after another, let the Wound be kept open as much as poſſible, not by the Uſe of Tents, for they are moſtly of pernicious Conſequence, for Reaſons hereafter to be aſſign'd, but by Inciſions into all the ſufficiently ſinuous or hollow Parts; and if the Dozils be thruſt pretty tightly into the Wound, it may be kept open 'till ſuch Time as the offending Matter is diſcharged.

Before I close this Chapter, let me advise, that all Ointments of this Nature be used very warm, and then they will assist the natural Heat of the Part, which is generally wanting on these Occasions, by reason the Blood and Spirits are drain'd off by the Wound, which robs the Parts adjacent of the due natural Heat mention'd; and all the Tribe of Turpentines have this particular Quality in them, to wit, if you apply them hot, they are strongly digestive and detersive; if coldly applied, they are almost of as little Efficacy as a greasy Ointment, which indeed is bad enough.

I must now proceed to give an Account of the Disorder call'd the *Anticor* in Horses.

CHAP. XXII.

Of the Anticor.

THIS Disease in Horses is call'd in *French*, *Anticœur*, on Account of its being over-against the Heart, or in the Breast.

The Signs. The Signs of an *Anticor* are (according to the best Observations of Men of Experience in Farriery) a Swelling in the Breast of a Horse, which some times rises upwards along the Gullet, and threatens suffocating him; he will hang down his Head, and groan much when he is laid down; forsaking his Food; neither can he stoop to Grass or Hay upon the Ground; he has a faultering in his Fore Legs, and trembling of the whole Body; and if you tie up his Head to give him a Cordial-Drench, he is likely to tumble over.

English Horses not very subject to the *Anticor*. It is said, that our *English* Horses are not so subject to this Distemper as the *French*, *Spanish*, or other foreign Horses are; tho' I know no Reason for it, unless it be that our Climate, which is more temperate, does not generate these inflammatory Disorders so frequently as in the hotter Regions.

The

The Cauſe proceeds from taking Cold upon hard and laborious Exerciſe, ſo that the Blood, &c. (as it were) ſtagnates, tho' near the Heart, and Parts adjacent; and this made the Sieur *De Solleyſell* imagine the *Anticor* a Diſtemper of the *Pericardium* or Bag which contains the Heart. The Cauſe of an *Anticor*.

Others are of Opinion, that it proceeds from rank Feeding, and much Fatneſs. But let that be as it will, here follows the Cure.

As there is ſtill a feveriſh Heat more or leſs in the Blood, when a Horſe is ſeized with the *Anticor*; therefore, Firſt, Bleeding (at ſeveral Times,) according to the Strength and Urgency of Symptoms, is indicated; I ſay at ſeveral Times, becauſe it is found by *Hæmſtatical* Experiments, that Bleeding at different Times is the moſt proper Method to cauſe Revulſion, and hinder the Blood from flowing with that Impetuoſity into the pain'd Part, as it otherwiſe would: And tho' 'tis true that once Bleeding may do this, yet it will not ſo effectually eaſe the Pain as when Blood is drawn at ſeveral Periods, according to the Urgency of Symptoms, as I have already ſaid. The Cure.

Next to Bleeding, (if the Horſe be bound in his Body or is what we call Coſtive) Clyſters are of Uſe; and the following may ſerve as a general one. Clyſter, when proper.

Take Leaves of Mallows, and Pellitory of the Wall, of each three Handfuls; Camomile Flowers, one Handful; Anniſeed, and ſweet Fennel Seed, each half an Ounce; Linſeeds, one Ounce: Boil theſe in three Quarts of Water to two; then ſtrain or preſs out the Liquor ſtrongly; and add of Caryocoſtinum Electuary, one Ounce; common Salt, two Ounces; and common Plaiſter-Oil, three Ounces: Mix A Clyſter.

Theſe ſhould be injected thro' a very long Pipe for the Purpoſe, and as warm as a Man can bear his Cheek to the Side of the Bladder it is tied up in; and then it may be expected in a little Time

(perhaps in an Hour) that the Horſe will void his Excrements, together with Wind, *&c.* and by that Means his feveriſh Heat will be diminiſhed: For, if the Excrement or Dung of Animals be longer than ordinary retained, ſome of its putrefying Particles are imbibed by the Inteſtines or Guts, and thereby get into the Blood, which ſtill adds Fewel to the before inkindled Flame.

The Clyſter may be repeated every two or three Days, as Occaſion offers; and the Horſe's Food ſhould be ſuch as is ordered in the *Strangles*, as white Water with a pretty deal of Oatmeal in it; for if you can nouriſh him up with this, and ſoft Food, ſuch as boil'd Barley given moderately warm, *&c.* it is much the beſt; not only as ſuch Things are eaſieſt to digeſt, but alſo by reaſon that Hay gives the Horſe much Trouble in chewing, and by the Motion of the Muſcles deſtined for *Maſtication*, and *Deglutition* or Swallowing, the Inflammation upon the Throat is increaſed; for this Diſtemper (as I ſaid before) ſometimes riſes from the Breaſt up the Gullet, and threatens ſuffocating or choaking the poor Beaſt.

If the Fever runs high, which (as I have hinted) may be known from the Number of advanced Pulſes above Forty, the common ſtated Number in a Minute, when a Horſe is in Health, and not ſcared or frighted: I ſay, if his Fever has run high, you may (after the Eighth or Ninth Day of the Diſeaſe, accounting from the firſt Attack of it) give him about two Ounces of the common *Cordial Ball*, which contains moſt Things proper for that Purpoſe, and you may mix it with *two Ounces of Venice-Treacle, four Ounces of common Treacle, and a Quart of ſtale Beer*; tho' if you will go to the Charge, a Quart of Canary is much better than Beer, provided the Canary be genuine and freſh. When this is done, give it the Horſe carefully, ſo that as little may be loſt as poſſible, and walk him a while in his Cloaths

A Cordial proper for the eighth or ninth Day.

Cloaths afterwards; but let his Water be always a little warm'd, as before obſerved.

Three of theſe *Cordial Mixtures* given at two or three Days Diſtance, I think ſufficient to recruit the Blood and Spirits, after they (the latter eſpecially) have been waſted and much ſpent in this Diſtemper.

A Horſe ſhould reſt a good while after acute Diſeaſes.

It muſt be remember'd, that a Horſe ſhould reſt for ſome conſiderable Time after acute Diſeaſes; as Fevers of any kind, or other violent and ſickly Diſorders: For if he is (when in this weak Condition) put to labour beyond his Strength, it may occaſion many and great Evils; as *Mangineſs*, *Farcin*; and Diſeaſes of the Stomach and Bowels, as *Scouring*, &c. So that from a tolerable good Horſe before the Diſtemper, he is now become a *waſhy, good for nothing, ſluggiſh Jade*; and, what is worſt of all, is likely to continue ſo, unleſs he undergoes a tedious Courſe of Phyſick, in order to bring the Fibres to their former Power of Elaſticity and Firmneſs.

CHAP. XXIII.

Of Diſeaſes of the Stomach, and Guts.

MR. *Gibſon* begins the 33d Chapter of his Book of Farriery with a very nice Obſervation; to wit, that "*as the Food of Horſes conſiſts "of the moſt ſimple Productions of the Earth, they "cannot be liable to many Diſeaſes of the Stomach.*" And what he ſays farther under the ſame Head is worth reading; only when he comes to treat of the Cure, he ſets down two Purges, which he tells us may be either of them given with Succeſs, to recover loſt Appetite. They are near the Cloſe of the 124th Page of his Book, and one of them is a Decoction, the other made into Boluſſes or Balls. Now the Decoction is a pretty mild and eaſy-working Purge; but the Ball is ſtrong enough for any

Horſe in full Vigour. Indeed he ſays, take of the *beſt Aloes* an Ounce and half, by which he may mean the *Succotrine Aloes* brought to us from *Arabia*, and *Egypt*, in Skins, and is of a blackiſh Colour in the Lump, but of a ſhining golden Hue when broke and powder'd, and has but little Smell: I ſay, if he intended this Sort of Aloes, he ſhould have been a little more explicit, for it is dearer than the common Aloes by five Shillings in the Pound-Weight; therefore you need not fear the Apothecaries will let you have that of ſix or ſeven Shillings, when they can ſell you Aloes for ſixteen Pence a Pound, which is imported from *Barbadoes* in large Shells or Gourds, of a ſtrong offenſive Scent, and is called *Hepatic Aloes*, from its dark Liver Colour. In ſhort, I know no one Drug of more univerſal Uſe in Medicine than Aloes, nor of more Efficacy for many Intentions, both as a Purge and Alterative. But to return:

The Uſe of Aloes very extenſive.

Reſinous Purges dangerous and rough in Operation.

In the *Purging Ball* for loſt Appetite, as preſcrib'd by Mr. *Gibſon* there are two Drachms of *Diagridium*, which is a reſinous Subſtance call'd *Scammony*, roaſted in a Quince; but correct it how you pleaſe, it is ſtill ſo reſinous that ſmall Particles of it are apt to ſtick amongſt the Folds of the Stomach and Guts, and cauſe ſuch Vellications or convulſive Twitchings, that they often endanger the Life of the Animal: And moreover, by the rough Operation of ſuch reſinous Purges, the Bowels are ſo irritated to a Diſcharge of their Contents, that the Creature oftentimes purges off the very *Mucus* or ſlimy Liquor or Moiſture which daubs over their internal Coat, and which *Mucus* Nature depoſits there as a Defence againſt any ſharp irritating Juices which may paſs through them.

Beſides, two Drachms of *Diagridium* is twelve good Doſes for a ſtrong Man, and this (conſider'd with the Quantity of *Horſe Aloes*) I think is an over-Doſe, eſpecially for a Horſe whoſe Stomach is (according to my Text) ſuppoſed to be in a depraved and weak Con-

Condition. Therefore when I come to the curative Intentions, I ſhall offer ſome Amendments to Mr. *Gibſon*'s *Decoction and Ball for Recovery of loſt Appetite*.

Moſt Diſtempers, eſpecially Chronic ones or thoſe of long ſtanding, derive their Original from depraved Digeſtion; and altho' Horſes (as I have ſaid before) are not ſo ſubject to Diſeaſes of the Stomach as Man, who ranſacks both the *Indies* for hot fiery Spices to ſatisfy his moſt unreaſonable Guſtation; yet many Diſeaſes in them are produced from Faults in the Stomach, or in other Words, the Faults in the Stomach or depraved Digeſtion, very often are the Occaſion of many Diſeaſes in Horſes, as well as that the Diſeaſes of the Body bring on loſt Appetite.

Horſes not ſo ſubject t Diſeaſes of the Stomac as Men, an why.

There are two moſt remarkable Cauſes of *Chylification*, Hurt or Crudities in Digeſtion, to wit, the *Acid Crudity* and the *Nidoroſe*. And firſt,

Acid Crudity brings on the Heart-burn, ſour and frequent Eructations or Belchings upwards; and this in Mankind, more eſpecially in Children, who are very ſubject to acid Crudities, is thrown up by Vomit; oftentimes by Nature, ſometimes by Art: But as Horſes, by reaſon of the Spiral Windings of the Gullet where it is inſerted into the Stomach, cannot eaſily vomit, therefore theſe auſtere and ſour Juices are carried along into the Inteſtines, and there cauſe Gripings, *&c.* And when a Horſe is troubled with over much Acid in his Stomach and Guts, he as naturally and with as good Reaſon deſires Mud and Dirt, as he does his Hay when he is hungry: And in my Thoughts, every Horſe which is conſtantly kept in the Stable, and has not Graſs ſometimes for Years together, ought to have now and then powdered Chalk, burnt Hartſhorn, or the like, given him in his Provender, inſtead of being threatned and often beaten by his ignorant and illiterate Keeper, for eating what would cure his Diſorder in Time. Burnt-Hartſhorn is much better than the Clay or Mud he would eat, becauſe it will abſorb or drink up more of the offending Acid in

Acid Crudity.

the Stomach, &c. And how powerful the Teſtacea or ſhelly Powders, as well as Chalk or burnt Hartſhorn, are in deſtroying Acids, or rather abſorbing them, any one may judge who makes the Experiment by mixing Vinegar or the like with ſuch Powders, which immediately loſes its Sharpneſs and Pungency upon the Tongue.

The Cure of Acid Crudity.

The Cure of Acid Crudity conſiſts in this; to wit, firſt, in abſorbing the Acid by the Uſe of burnt Hartſhorn for ſome Time; then a Cordial Drink or two, prepared with Volatile Aromaticks, according to the following Preſcription.

Take a Quart of White Wine, or for want of this a Quart of Beer; and grate into it two Nutmegs of about a Penny a piece; and give it the Horſe by a Horn, Milk warm.

After the Drink, in a Day or two, may be given the following Purge; but if Purging be made uſe of before ſuch Preparation of the Juices, nothing will be diſcharged, but Gripings and Convulſive Motions will be occaſioned. The Purge is this.

A Purge for Acid Crudities in the Stomach, &c.

Take of Aloes, once Ounce; Diapente, an Ounce and half; Salt of Tartar, half an Ounce; Syrrup of Buckthorn, an Ounce and half; and with Flour of Brimſtone, make them up into two Balls, and give them it in the ordinary Method.

Nidorous Crudity, what.

Nidorous Crudity, from the Word *Nidor*, which ſignifies any Thing of a bad Smell or Flavour, is, when the Nouriſhment is corrupted, ſo that it turns into a putrefied Solution of a horrid Taſte and Smell, altogether unfit for proper Chyle, and does not (in any eminent Degree) differ from Acid Crudity; only the Eructations are not acid, but rather inſipid, putrid or ſulphurous, like the Taſte of fry'd Eggs when they are burnt, as near as I can any way judge it. This occaſions Heart-Burnings; therefore the Horſe partly loaths

loaths his uſual Food, and longs after Mud and Dirt; and what the divine *Hiprocrates* ſays with relation to Human Bodies, will hold good in Brute Creatures, whoſe Compoſition is of Solids and Fluids actuated by the ſame Mechanick Powers with our own; to wit, *that thoſe Things which the Appetite is fond of, are much more eaſily digeſted, than ſuch as the Stomach has no deſire after*; and therefore the common Proverb is true, *what one Reliſhes, Nouriſhes.* For, the Stomach may truly be ſtiled the Kitchen of the Body, its Office being to receive the Food as into a Store-Houſe, and to digeſt the ſame in its Primary Action; whence Indigeſtion is an undoubted Forerunner of the Deſtruction of the whole Oeconomy.

Digeſtion is ſimply a Work of Nature, nor can it be promoted by Art; for we can only aſſiſt and help the Work of Nature, and ſo correct the Ferment in the Stomach, that it may be reduced to its natural State. Therefore, the ſame Method I have preſcribed for the Cure of Acid Crudities, will perform the Work with relation to Nidorous Crudities. I ſhall juſt mention a Paſſage in Mr. *Gibſon*'s Book of *Farriery*, with regard to Horſes which are troubled with ſour Juices upon the Stomach, and which for ſuch Reaſon deſire to eat Clay out of the Walls, *&c.* He tells us, "that "when he attended the Army, he took an Oppor- "tunity of gratifying a Horſe in a very ardent De- "ſire of that Kind. The Horſe had ſuffered very "much from his Keeper, and had been often beat "for eating Clay out of the Wall;" he then ſays, "he brought him a Piece of Chalk the Bigneſs of "a Man's Fiſt, and laid it in the Manger; the "Horſe turn'd it over with his Noſe ſeveral Times, "and at laſt broke off ſome of the Corners and eat "them; whereupon Mr. *Gibſon* took up the Chalk "to break it into ſmaller Pieces; but becauſe the "Horſe thought he was going to be robb'd of it, "he puſhed his Head after it with all imaginable "Eagerneſs, and when it was broke he eat the

The Cure.

" greateſt Part of it, and fell immediately to his " Hay. The Dragoon told Mr. *Gibſon* he gave " him more Chalk afterwards, and obſerved that " the Horſe eat his Hay better for it; but being " ſoon after obliged to march, he was perfectly " cured by the Exerciſe, and had no farther Cra- " vings of that Kind."

You may by this Account, ſee how neceſſary it is to allow a Horſe (that has Acid Juices in his Stomach in too great abundance,) to eat Clay, *&c.* or rather to give him Chalk, burnt Hartſhorn, or Oyſter-ſhells in fine Powder, or the like; otherwiſe he will not thrive nor eat his Hay) and alſo Exerciſe is one great Help, towards removing the Complaint.

The Hungry Evil.

The Hungry Evil in Horſes is the ſame that in Men we term *Malacia* and *Bulimia*, vulgarly called a Canine or Dog like appetite, although *Bulimy* ſignifies an Oxe's Appetite.

The Cauſe.

The Cauſe of all theſe is Acid and Nidorous Crudities, of which I have juſt now treated; and as the

The Cure.

Cure conſiſts in Abſorbent, Evacuant, and Stomachick Medicines as mentioned, I ſhall not take up the Reader's Time ſo much as to make a diſtinct Chapter of it, but proceed to an Account of the Diſtempers of the Guts, and firſt of the Colick.

CHAP. XXIV.

Of the Colick.

AS the Colick is a Diſtemper which (as well as many more of the Stomach and Guts) proceeds from Flatulence or Wind pent up, I muſt beg leave to explain what is meant by *Carminative* Medicines, or ſuch Medicines as are ſaid to expel Wind; and as the Nerves are frequently under great Diſorders from pent up Wind or *Flatus*'s, what diſſipates

and

and expels ſuch Vapours, muſt be reckoned of great Service to thoſe Parts.

A great many People ſeem to be Strangers to this Term, I mean the Word Carminative, which does not appear to carry in it any Thing expreſſive of the Medicinal Efficacies of thoſe Simples, which paſs under its Denomination. Carminative Medicines explained.

This Term certainly had its Riſe as thus apply'd, when Medicine was too much in the Hands of thoſe Jugglers, who, for want of a true Knowledge in their Profeſſion, brought Religion into their Party, and what through Ignorance they were unable to do by rational Preſcription, and the Uſe of proper Medicines, they pretended to effect by Invocations, and the Correſpondence they kept with Heaven: Which Cant being generally, for the Surprize-ſake, couch'd in ſome ſhort Verſes; the Word *Carmen*, which ſignifies a Verſe, was made alſo to mean an Inchantment: Which, as it was a very good Cover for their Ignorance as well as their Knavery, was frequently made uſe of to ſatisfy the People of the Operation of a Medicine they themſelves could not account for; and as thoſe Medicines, now under this Name are of ſome quick Efficacy, and the Conſequences thereof in many Inſtances very great and ſurprizing, the moſt violent Pains ſometimes ariſing from pent up Wind, which immediately ceaſe upon its being diſperſed: For theſe Reaſons, I ſay, ſuch Medicines as give Relief in this Caſe are more particularly ſtiled Carminatives, as if they cured by Inchantment; the Complaint removed by them being ſo ſudden, that the ordinary Manner of Operation of a natural Cauſe, is not eaſily imagined to take place ſo ſoon.

But howſoever this Term came into the Profeſſion, its common Uſe has ſufficiently determined its Meaning; to wit, that whatſoever Medicines inwardly, or Applications outwardly, expel or diſperſe Wind, ſuch I ſay are ranked under the Claſs of Carminatives.

All the Parts of the Body are Perſpirable; and all Wind in the Veſſels, &c. of the Body, is ſaid to be perſpirable Mattter, broke thro' the Coats of ſuch Veſſels.

How ſuch Medicines diſperſe Wind may be conceived, if we do but conſider, that all the Parts of the Body are perſpirable. *Santorius*, in his *Medicina Statica*, determines all that is called Wind in the Bowels to be ſuch perſpirable Matter as makes its eſcape through the Coats of the Stomach and Guts. And this likewiſe happens to the Muſcular Parts; for ſuch perſpirable Matter often breaks out and lodges amongſt the Muſcles, &c. for ſome Time.

Carminative Medicines of warm ſubtile Parts.

Now, whatſoever will rarefy and render thinner ſuch Collections of Vapours, muſt conduce to their utter Diſcharge out of the Body, and conſequently remove thoſe Uneaſineſſes which ariſe from their Detention. And as thoſe Things in Medicine which paſs under this Denomination are warm, and conſiſt of very light ſubtile Parts, it is eaſy to conceive how a Mixture of ſuch Particles may agitate and rarefy thoſe Flatulences, ſo as to facilitate their Expulſion; and more eſpecially when we conſider what a Help to this Purpoſe thoſe grateful Senſations, which ſuch Medicines give to the Fibres, may be; this cannot but invigorate their tonick Undulations or tremulous Motions, inſomuch that by Degrees the obſtructed Wind is diſlodged, and at laſt quite expelled.

If the Obſtruction is not great, as it ſeldom is in the Stomach, Inteſtines or Guts, by reaſon of their large Vent both upwards and downwards, the Rarefaction of the Wind upon taking ſuch a Medicine is often ſo ſudden, and its Diſcharge likewiſe, that it goes off like the Exploſion of Gun-Powder. In fine, all Things that warm, rarefy, and attenuate the obſtructed Humours, may (according to the common Acceptation of this Term) be called Carminative Medicines.

Before I proceed to an Account of the Colick, it may not be thought impertinent in me to deſcribe the Gut Colon in a Horſe, which differs from the Colon in Man, inaſmuch as in the firſt it appears as three

three Guts, being (as it were) divided by two Necks, (as they are termed by *Hippotomiſts*) whereas in Man this Gut is ſeemingly but one; and in my Opinion, the Reaſon the Necks or narrow Places in the Colon of a Horſe are ſo ordained by Nature, is, that the Food (which is moſtly hard to digeſt) ſhould not paſs off before the Glands of the Inteſtines have taken in and ſuck'd up what was neceſſary to lubricate and make them ſlippery, as well as for other Reaſons hereafter ſet down in the following Deſcription.

The Colon of a Horſe described.

The Colon of a Horſe, which (as I have ſaid) ſeems to be three Guts, by reaſon of the two Necks of about half a Yard in Length each, is drawn up into many Cells or Purſes by Means of two Ligaments, one of which runs along the Upper, and the other the Under Side of it, which, with the Aſſiſtance of a Valve or Flap at its Beginning, hinder the Excrements either from returning back into the ſmall Guts, or falling too ſoon downward, as I juſt now hinted, before the Chyle or Milky Subſtance prepared from the Food be ſent into its proper Veſſels. And indeed the *Cæcum* or Blind Gut, which is the firſt of the three larger Guts, ſeems to be ſo contrived in Manner of a Valve to hinder the Aliment and Chyle from paſſing too ſoon into the Colon; for if the Aliment and Chyle were not in ſome Meaſure hinder'd in their Paſſage thro' theſe large Guts, the Body could not be ſufficiently ſupply'd with Nouriſhment: And thoſe who pretend that nothing can enter into the Maſs of Blood which is injected by way of Clyſter, may go on in their Ignorance; but I am ſatisfied of the contrary, for I have cured a great many People of Agues by adminiſtring the Jeſuit's Bark in Clyſters, when the Patient could not bear the Thoughts of it in any other Form.

Agues cured by giving the Bark in Clyſters.

The firſt of theſe Colons is about a Yard and half in Length, the ſecond about a Yard, and the third, or that Part which joins to the *Rectum* or

Arſe-Gut, near ſix Yards in Length; ſo that the Colon of a Horſe fourteen Hands high may be ſaid to be nearly eight Yards and a half long; and from it along the *Rectum* or Straight-Gut to the *Anus*, where the Excrements are diſcharged, is not above half a Yard; ſo that it is plain Clyſters operate moſtly in the Colon; tho' I muſt ſay they are given in too ſmall Quantities; for what ſignifies two Quarts of Liquor in a Gut nine Yards long, and four or five Inches Diameter in a natural State: But in the Colick it is ſo diſtended with Flatulences, that its Diameter exceeds ſeven or eight Inches, as I have frequently obſerved in thoſe dying of that Diſtemper, or, which is much the ſame, the Griping of the Guts. Now for a Deſcription of the Colick.

Clyſters ſhould be given in large Quantities.

The Word Colick defined.

The Word *Colick*, ſtrictly taken, ſignifies Diſorders of the Colon only; but now generally it is taken for any painful Diſorder of the Stomach, or Bowels, attended from firſt to laſt with a thick and troubled Urine, whether in Man or Brute Creatures. And from hence ariſes the common Diſtinctions of, Firſt, a *Bilious Colick*, which ſprings from a Redundancy or Acrimony of Choler irritating the Bowels, and ſo cauſing Gripings, and generally a Lax or Scouring.

Firſt, a Bilious Colick, what.

The Cauſe.

The Cure.

The Cure of a *Bilious Colick* is performed by gently purging off and ſoftening the offending Humours, which is accompliſh'd by Lenitives and Emollients. The following Clyſter is very proper in the firſt Stage of this Diſtemper.

A Clyſter for the Colick.

Take Mallow-Leaves, and Camomile-Flowers, of each two Handfuls; Pellitory of the Wall, three Handfuls; Flower of Elder, two Handfuls; Juniper Berries bruiſed, four Ounces: Boil theſe in four Quarts of Rain-Water to three; then ſtrain and preſs out the Liquor pretty ſtrongly, and add two Ounces of Lenitive Electuary; and give the Horſe the whole three Quarts by way of Clyſter at once; for, as I have

have ſaid before, unleſs Clyſters be injected in large Quantities, they are but of ſmall Service.

After the Colon and Straight Gut are cleanſed from Excrement by the Uſe of the aforeſaid Clyſter, it may be needful to give him the following eaſy Purge.

Purge in the Colick.

Take of Alexandrian Senna, (known by the pointed Leaf, Brightneſs of Colour, and Quickneſs of Flavour,) two Ounces; Liquorice-Root, one Ounce; Salt of Tartar, two Drachms; Caraway Seeds; and freſheſt Juniper Berries bruiſed, each one Ounce; Boil theſe in a Quart of Water to the Conſumption of half; and then ſtrain and add *Lenitive Electuary*, (as freſh as you can get it, for when old it is good for little,) two Ounces; and of good *Canary*, half a Pint. Give it the Horſe in the Morning rather more than Milk-warm, and keep him warm cover'd for ſome Days.

Opiates dangerous in the firſt Stage of the Bilious Colick.

It is common in Caſes of the *Colick* in Horſes for Farriers to give *Venice-Treacle*, *Mithridates*, or *Diaſcordium*, in their Cordial Drinks, and often in large Quantities by way of Clyſter, and this in the firſt Stage of the Diſtemper; which ſo locks up the Cauſe of it in the Guts, that it is all one in Effect, as if you ſet the Muzzle of a Piſtol to the Horſe's Fundament, and let fly, in Hopes to clear the Way of all Obſtructions at once.

Indeed after the Cauſe of the Diſorder is removed by *Lenient Purgatives*, *Clyſters*, &c. as before preſcribed, it is abſolutely neceſſary warm *Opiates* ſhould be adminiſter'd, ſometimes by Way of Clyſter, ſometimes by the Mouth; for altho' theſe Sorts of Medicines are (as I have ſaid) of ſuch dangerous Conſequence in the Beginning of the Diſeaſe, yet are they requiſite to finiſh the Cure, and allay the Tumult of the Bowels, which otherwiſe ends in Superpurgation, or ſuch a Lax or

Scouring

Scouring as may cauſe the Horſe to void moſt of the *Mucus* or ſlippery Matter, which ſhould defend the inner Membranes of the Guts from the Eroſion and Acrimony of the Juices: Therefore, when it is properly judged that the Cauſe of the Diſorder is taken away, let the following Mixture be given inwardly.

A Mixture for the Colick.

Take a Quart of Canary, or for Want of that a Quart of warm Beer; diſſolve about the Bigneſs of an Egg of my Cordial Ball in it, and an Ounce of Venice Treacle, or Mithridate: To which may be added (if the Horſe ſcour more than ordinary) *One Hundred Drops of Liquid Laudanum, and the like Number of Tincture of Caſtor.* Stir it well before you give it.

The Purge, Clyſter, *&c.* may be repeated according as there is Need: But give no Opiates in the Beginning of the Diſtemper; for, notwithſtanding I have as great a Veneration for Opiates as the Gentleman who ſaid, *If there was no Opium he would be no Phyſician*; yet I am ſatisfy'd the Secret lies in the Adminiſtration, not in the Knowledge of good or bad Drugs. And this Secret will ſtill remain in the Hands (or rather Heads) of a very few, altho' Books upon the Subject of Phyſick were every Day publiſhed. And no doubt the true Reaſon of this is owing to the indolent and ſluggiſh Temper of Mankind, which ſo bewitches them, that they will not take Pains to ſearch after Truth; Mathematicks, Mechanicks, Natural and Experimental Philoſophy, being meer Bugbears to them; ſo that they are contented to jog on in the old blind Road of Ignorance, and preſcribe Medicines in Spite of Nature and their Stars, and without knowing, or being able to give any tolerable Account of the *Modus Operandi*, a Knowledge ſo eſſentially neceſſary in the Cure of Diſeaſes. Theſe are the Men who have not the *Why* for the *Wherefore*, and whoſe Faith or chief Reliance is upon the Number of Drugs in the Preſcription, not at all conſidering

the

the Basis or principal Ingredient, to which the Cure (if any be wrought) is attributable.

During the Use of Opiates (which may be given every other Day for two or three Turns,) it is proper to give the Horse a Solution of *Gum Arabick* in the Water he drinks, which may be thus prepared.

The Gum-Arabick Water.

Take an Ounce of Gum Arabick; bruise it, and boil it in a Quart of Water, 'till 'tis dissolved; then mix it with half a common Pail full of cold Water, and Oatmeal; and let the Horse drink this sort of Water Milk-warm for some Time, to wit, for a Week; and by that Time it may be supposed that the Inside of the Guts is well imbued with slippery Matter to defend them from acrimonious or sharp Juices.

Exercise proper in most Distempers.

I hope I need not tell the Reader that moderately walking the Horse will do him Good in the Colick, seeing that moderate Exercise is proper in most Distempers, excepting Fevers, in which the Blood is already at too high a Pitch to admit of it.

Baglivi's Opinion of the Bilious Colick.

The famous *Baglivi* was of Opinion, that the Seat of the *Bilious Colick* is in the *Mesentery* or what we call the *Net* in Brute Creatures; and therefore he ordered his Patients, when the Distemper was stubborn, to take a Journey, that the Body might be shaked up and exercised by Riding for some Days, and the Fibres of the Mesentery, which by long Pain were relaxed, might assume their former Oscillations to eradicate and expel the distemper'd Impurities; after which he orders a *Semicupium* or warm Bath, wherein the Patient sits up to the Navel for some Time: But as this last cannot well be done for a Horse in the Colick, tho' most certainly if he was nearly over Head in warm Water it might be exceeding proper; yet I say, as this is scarcely practicable upon Horses, we must content ourselves with Exercise, giving them now and then an easy Trot, to shake the Guts a little, which

which will greatly aſſiſt in diſlodging the Enemy. Permit me now to give an Account, Secondly, of the Flatulent or Windy Colick.

Secondly, The Windy Colick. The Signs.

The Flatulent or Windy-Colick ſhews itſelf by Pain in the Bowels, and proceeds from Wind pent up there, which gives the Horſe ſuch Pains and convulſive Twitchings, that he will oftentimes lie down, tumble, and ſtart up again haſtily, and ſtrike his Belly with his hinder Feet, and ſtamp with his Fore-Feet, and forſake his Food. Theſe are the moſt common Signs of a Flatulent Colick, and the Divine Contriver of all Things hath wiſely order'd (both in Brute and Human Creatures) that the *Colon* ſhould ſurround the whole *Abdomen* or lower Belly, and with the *Rectum* (before deſcribed) touch all the Parts contain'd in it; ſo that by immediate Fomentation with Clyſters, we might eaſe ſuch Parts of their Maladies: I ſay, this we have to praiſe God for, as well as for the reſt of his wondrous Works.

The Cauſe.

The Cauſe (as I have ſaid) is from pent up Wind, which for the moſt Part is occaſion'd from the Excrement or Dung's being too long retain'd, which renders the Juices viſcid and ropy, ſo that the windy Flatulence cannot eaſily break through.

I remember ſome Author or other that ſays, "Flatulencies or windy Diſorders are bred in the "Stomach and Bowels by a vicious Fermentation, "excited by a preternatural Acid in a viſcid Sub-"ject, and that the Cure conſiſts in Digeſtives and "evacuating Medicines, together with a regular "Diet."

This Deſcription is ſuccinct and clear, ſo that I need not trouble the Reader any farther, only in ſetting down my own Thoughts as to the Cure.

The Cure. Back-racking what, and how perform'd.

Firſt, if you ſuſpect that the Flatulence proceeds from harden'd Dung, the Horſe muſt be Back-raked, as the Farriers call it, which is done by anointing the Hand very well with any Sort of Oil or Butter, and by little and little fetching out his Excrements,

as far as the Farrier can well put his Arm into the Fundament: But I adviſe every Gentleman to pitch upon a Perſon to do this Friendly Office, who has a Hand and Arm of the ſmaller Size: For ſome are ſo large and brawny, that unleſs the Horſe was of the larger Sort, there would be ſome Danger of an Inflammation in the Straight Gut, which would be of far greater Concern than the Gripes.

After the Horſe has been Back-raked, in two Hours Time give him the Clyſter as preſcribed for the Colick.

Mr. *Gibſon* very much extols a Clyſter he preſents us with for Pains in the Guts, after the groſſer Excrements have been diſcharged by ſuch Clyſter as I juſt now mention'd. His Clyſter is this,

Mr. *Gibſon*'s Clyſter for Pain in the Guts.

Take red Roſe Leaves, two Handfuls; Tops of leſſer Centaury, and Wormwood, of each one Handful: Boil them in two Quarts of Water to three Pints; and in the Decoction diſſolve two Ounces of Diaſcordium, and half a Pint of Treacle-Water, or Spirit of Wine.

The Baſis of this Compoſition lies in the Opium and other warm Ingredients of the Diaſcordium. So that in the main, if the Diaſcordium was only mixed with three Pints of warm Punch, it would be full as good as Mr. *Gibſon*'s *Red Roſe Leaves, Tops of Centaury*, &c. Therefore I ſhall humbly offer an Amendment, or rather a more proper Clyſter in the Place of his, which he ſays, lies ſo cordially in the Bowels. It is this,

A Clyſter for Wind in the Guts.

Take Camomile Flowers, two Handfuls; Aniſeeds, and leſſer Cardamons bruiſed, of each one Ounce; Long Pepper, half an Ounce. Boil theſe in five Quarts of Water to three; and add thereto, when ſtrain'd, three Ounces of my Cordial Ball; half a Pint of Brandy or Rum, and half an Ounce of Oil of Amber: And give it the Horſe by a long Clyſter-

Clyſter-Pipe, and tie his Tail down to his Tuel f ſome Time.

I can ſee the Reader ſmile at finding the Cordi Ball come into the Compoſition of a Clyſter; b he may be eaſy when I aſſure him, that there a ſeveral Things ready mixed and incorporated in tha Ball, which are proper by way of Clyſter; mor particularly, Oil of Aniſeeds is a noble Thing, b *Van Helmont* ſtiled *Solamen Inteſtinorum*, it is of g great Eſteem and Account in the Cure of Flatulen Diſorders of the Guts.

De Grey has the following Cordial Drink in th Chapter of the Colick.

De Grey's Drench for the Colick.

Take of White Wine, a Quart; Fenugreek Seeds Bay-Berries, and Pepper, of each four Ounces Grains of Paradiſe, and Ginger, of each one Ounce Water Creſſes, two Handfuls; Sengreen, one Pound Mint, one Handful: Stamp the Herbs, and poun the Spices; then ſtrain it, and put to it of Live Honey two Spoonfuls; and ſo give it the Horſe Blood warm.

Notwithſtanding *De Grey*'s great Experience in Farriery, I think the Quantity of Pepper too great in this Mixture, to be given by the Mouth; nor do I ſee what Buſineſs the *Sengreen*, as he calls it, or *Houſe-Leek* has to do in ſo warm a Compoſition; that Herb being known, even by the common People, as an exceeding great Cooler; and it really is ſo, inſomuch that I have ſeen the unſkilful Application of it to a Burn or Scald, ſo cool and deſtroy the natural Heat of the Part, that a Mortification or Gangrene has been threatened for ſome conſiderable Time after it. Therefore, I think the *Sengreen* ſuperfluous, and contrary to the main Intention of the Drink; unleſs *De Grey* thought he had put too much Pepper down in his Preſcription, and ſo thought proper to cool it with the Juice of

Houſe-

House-Leek: But even this would be a ſtrange round-about way of preſcribing, and ſomething agreeable o the old Family Receipts ſo much eſteem'd by ood Houſewives, *&c.* But if the Horſe be a ton'd Horſe that is troubled with the Colick or Gripes, this laſt mentioned Author very merrily adiſes he ſhould have a Mare, eſpecially if he is ſo fflicted that he cannot piſs: and adds, that it preents ſundry Sorts of Sickneſs and Diſeaſes, and rengthens Nature.

Now *De Grey* was no Philoſopher, otherwiſe he uſt have known, *that the oftener any Spring is ound up to its Height, it every Time loſes ſomeing (tho' perhaps very inconſiderable) of its Elaſcity*; and for this very Reaſon Coition can in no iſe ſtrengthen Nature; for *Omne Animal poſt Coi, m hebes.*

If the Colick or Griping of the Guts cauſe a oppage of the Horſe's Water, it moſtly proceeds om harden'd Excrements, which ſo preſs the Neck the Bladder, that the *Sphincter Veſicæ* cannot fficiently be dilated for the Paſſage of the Urine: herefore in ſuch Caſe Back-rake him, and give m the Clyſter for Wind as before mentioned, ly adding half a Pound of any common Oil to it, hich will lubricate, and make ſlippery the ſtraight ut, *&c.* ſo that the Dung may ſlide more eaſily ng it.

A Clyſter when the Horſe has a Stoppage of Water from harden'd Excrements.

There is a very proper and eaſily prepared Clyſin Mr. *Gibſon*'s Book, which will excite the Pealtick Motion of the Guts, and forward the Exſion of the Excrement. It is this. "*Take Beef Broth, (but in my Thoughts any ſort of Broth of Fleſh,) two or three Quarts; one Handful of Salt, and half a Pound of Butter: Mix, and make a Clyſter to be injected very warm.*"

Mr. *Gibſon*'s Clyſter for the ſame.

I ſhall cloſe this Chapter with a Hiſtory relating he Caſe I am treating of; which is of a Dragoon rſe that died of the Farrier, who (like many n in another Profeſſion) was ignorant of the Structure

An Account of a Horſe that died of the Farrier.

Structure and Mechaniſm of the Creature, wh
was the Subject of his Art, as Mr. *Gibſon* ha
ſomely expreſſes it, in Page 134 of his *Farri*
Guide; the Story is as follows.

Mr. *Gibſon* tells us, " that a Dragoon Horſe
" the Regiment to which he belonged, after a
" five Weeks March, coming to ſtand at his Ea
" grew exceeding Coſtive, and had his Fundame
" and Sheath much ſwelled, and that he was co
" mitted to the Care of one, who was tolerab
" well ſkill'd in many of the common Things; b
" being wholly unacquainted with the Structu
" and Mechaniſm of that Creature, which was t
" Subject of his Art, committed a grand Miſta
" in giving him a ſtrong Doſe of Purging Phyſic
" There being no Vent for a Paſſage of the Excr
" ments downwards, and the Horſe having no C
" pacity to vomit, and diſgorge himſelf upward
" was put into the moſt violent Agony imaginabl
" and at laſt died in ſtrong Convulſions."

Mr. *Gibſon* goes on ſaying, " that perhaps th
" Man might have ſucceeded in Caſes of leſs Ob
" ſtinacy, and where there was little or no Swe
" ling of the Fundament; and that if there ha
" been a Poſſibility of making the Horſe vomit
" he might have ſucceeded even in this Caſe; fo
" then the Phyſick would have gone off that way
" and after ſeveral Diſcharges by the Mouth, th
" Remainder might have gone downwards, as i
" oftentimes happens to Human Bodies; becauſe
" the ſtraining to vomit makes a ſtrong Compreſſi
" on of the Muſcles of the lower Belly, which
" greatly forwards the Dejections by the Funda-
" ment: And therefore in ſome obſtinate Caſes o
" this Nature, the beſt Phyſicians have order'd
" Vomits with Succeſs. But as it is quite other-
" wiſe with Horſes; and that their Stomachs are
" not otherwiſe to be moved with the ſtrongeſt *Sti-*
" *muli*, than only to create Sickneſs, and cauſe
" them to ſlaver a little; Purging is not to be at-

" tempted

tempted in any ſtubborn Coſtiveneſs, but by Clyſters."

This Account, and Mr. *Gibſon*'s Obſervations on it, are well worth obſerving; and although ſays he belong'd to a Regiment, I am ſure by his anner of Writing that he was no common Far-r; for not one that ever I talked with, or whoſe orks I have read, come any thing near Mr. *bſon*'s Way of Reaſoning: But on the other Hand, e Diſcourſe of the Modern, and the Writings of e Ancient Farriers, agree in this, to wit, that they equally a Compoſition of Nonſenſe, and unin-ligible Jargon built upon falſe Principles.

There are three different Sorts of Colicks more in the two I have mention'd, which are incident Human Bodies, to wit, the *Hyſterick Colick*, the *rvous-Colick*, and laſtly the *Stone-Colick*, ariſing m Irritations of Stones and Gravel in the Kid-s, and urinary Paſſages, and cauſing violent Pain Conſent of Parts: But as theſe three Kinds are common to Horſes, I beg leave to proceed to Account of what we call a *Diarrhœa* in Men, a Lax or Scouring in Horſes.

Three different Sorts of Colicks.

CHAP. XXV.

Of the Lax or Scouring in Horſes.

Shall not trouble the Reader with a tedious De-ſcription of the ſeveral different Kinds of Looſe-es or Scouring, by reaſon ſuch Account would er tend to embarraſs than edify the Reader. refore I ſhall content myſelf with as ſuccinct brief a Deſcription as may be.

Lax or Scouring in Horſes, is a frequent charge of Thin, Watery, Mucous, Phlegmy, hy, Fat, Colerick, Black-Matter, by the Fun-ent; and this is moſtly with, tho' ſometimes without

The Signs.

without Excrements; and commonly, but not always, attended with Griping Pains in the Guts.

The Cure. If the Cauſe of this Diſtemper is any Error in the Horſe's Food, Water, or Exerciſe, the Removal of ſuch Cauſe is the better Half of the Cure.

Then from whatſoever Cauſe the Scouring proceeds, the Stomach is to be ſtrengthened, and ſuch Things given inwardly as abſorb Acids; both which Forms I have mention'd before: However, that the Reader may not be at the Trouble of looking backwards, I ſhall again name ſome Drugs which are proper in ſuch Caſes; and, firſt, I think if you give the Horſe pretty well of my Cordial Ball, either by way of Bolus, or diſſolved in Wine or Beer, it is as good as moſt Things I can order. However, leaſt it may be thought that I intended to make this Cordial Ball as univerſal as Capt. *Burdon* has made his Turnep-Poultis, I ſhall offer a Cordial Stomachick Drink, (or Drench) as follows.

A Cordial Carminative Drench for the Lax or Scouring.

Take Anniſeeds, Carraway-ſeeds, and Cardamoms the leſſer, of each an Ounce; Juniper-Berries, four Ounces; bruiſe the Seeds and Berries, and put them into five Pints of Mint-Water; then add to them two Ounces of Vinice Treacle, or Mithridate. Boil to the Conſumption of half; then ſtrain out the Liquor, and add to it half a Pint of good Red Port Wine, and half a Pound of Treacle.

The Price. This may be prepared for about two Shillings; and he who will not lay out ſo ſmall a Matter for a right good Drink for his Horſe, ought to trudge on Foot: But I have one Thing to ſay for't; it is not ſo dear as Mr. *Gibſon*'s Clyſter for the Lax or Scouring, Page 137. where he orders *three Ounces of Oil of Rue* at a Time, which will coſt thirty Shillings; unleſs the Apothecaries can make you believe that common Oil, in which Rue has been infuſed, is as good as the Chymical Oil, tho' there's no Compariſon between them.

As

As to Medicines which abſorb Acids, they are ll the *Teſtacea* or Shelly Powders, ſuch as *Coral*, *earl*, *Crabs-Eyes*, *Burnt-Hartſhorn*, *Oyſter-Shells*, n Powder, or the like. And if you aſk for any of he firſt Sort, 'tis ten to one the Apothecaries will nly let you have of the laſt; which really is no reat Cheat, ſince it is every Whit as good as any f them, though it may be afforded for a Penny an unce in very fine Powder; and it ſhould be finely owder'd, or like the reſt of the *Teſtacea* 'tis not of ear ſo much Service. The Virtues of Teſtaceous Powders.

There is a very fine white Oyſter-Shell gather'd pon the Sea-Shores, which the *London* Druggiſts end to their young Cuſtomers in the Country for Groat or Sixpence a Pound: But if you throw a arcel of large or any Oyſter-Shells upon Walls or ut-houſes, to blanch or whiten with the Weather, un, *&c.* the Powder of them will be as good as ay; but it muſt be ſo prepared by grinding upon Marble with Water, that you cannot feel it gritty the Teeth; for unleſs theſe Powders are thus anaged, as I ſaid before, they are not of much ervice.

Molten Greaſe is only a fat or oily Scouring, and riſes from a Colliquation or Melting of the Fat of e Body. Moulten Greaſe.

In all Kinds of Looſeneſſes or Scourings, the orſe's Drink ſhould be ſparing and moderate; for he be allow'd to take too much Liquid, it will ther encourage than abate the Flux or Scouring; nd in all his Water let him have *Gum Arabick* diſlved in it, according to the Directions given in the *um-Arabick* Water for the wet Gripes or Colick, hen there happens a Purging along with it.

It is a nice Thing to judge rightly when to ſtop Looſeneſs and when to encourage it: Therefore, the firſt Place, if the Horſe's Appetite be good, d that he has pretty well of Fleſh upon his Back, not immediately go about to ſtop his Scouring; r it may be, and very often is the Out-let by which Nature tempers Many Diſ-

carried off by critical Looſeneſſes.

Nature is working off ſome latent Enemy, which if retain'd in the Blood a while longer, would bring on dangerous Diſtempers, as Fevers, *&c.* Therefore, I ſay, do not immediately ſtop the Scouring, (if the Horſe take Food ſufficient to withſtand it,) but rather give him warm white Water with *Gum Arabick* for a while, to try how Matters go. Yet if his Scouring continue too long, and that he purge off the very *Muc s* of the Bowels, which the ignorant Grooms and Farriers often Miſtake for a good Omen, when they think that the Horſe's parting with ſuch Stuff muſt certainly do him Service; whereas (as I have already ſaid) this very mucous ſlymy Matter is as neceſſary for lining the Inſide of the Bowels, and defending them from ſharp irritating Humours which paſs thro' them, as the Chyle is to ſupply Nouriſhment to all Parts of the Body: I ſay, if the *Lax* or Scouring continues too long upon him, give him the following Drink.

The Aſtringent Purge for Scouring.

Take Red Roſe Leaves, (or the dry'd Buds which the Apothecaries keep,) two Ounces; Yellow Sanders, three Ounces; Tormentil Root, four Ounces: Bruiſe and boil theſe in two Quarts of Water to one; then ſtrain, and add of choice toaſted Rheubarb in fine Powder, half an Ounce; Syrup of dried Roſes, three Ounces; Mix, and give it the Horſe in a Morning Milk-warm.

We do not certainly know the Plant of which Rheubarb is the Root, tho' it is probably a Species of *Lapathum* or Dock, call'd by *Herman*, *Lapathum Sinenſe*; and *Muntingius* in his Book *De vera Herba Bullanica*, pretends to have cultivated it in *Holland*, yet I do not think he could do it to any great Perfection.

We have a Root in *England* ſomething like the *Turkey*, or rather the *Eaſt India Rheubarb*, called *Rhaponticum* or *Monk's Rheubarb*; but it is eaſily diſtinguiſhed from the Foreign Sorts, by a ſlimy mucous

mucous Taſte which it leaves in the Mouth, and becauſe when it is cut it appears regularly marbled, of a Red, White, or Yellow Colour; and theſe Colours are diſpoſed in a radiated Manner. This Sort, to wit, Monk's Rheubarb is a ſtanding Ingredient in the Medicated Ales or Diet-Drinks intended for the Cure of the Jaundice, and removing Foulneſs of the Urinary Paſſages; which it does by its deterſive Quality, for it does not come up to a Purge.

An Account of Rheubarb, and its Virtues.

The Rheubarb from the *Levant* is now accounted beſt; it is of a bright yellowiſh Colour, and of a Nutmeg-Grain if 'tis good; tho' a deal of the beſt Pieces will be decay'd in every Parcel you look upon. There is ſome comes from *China*, and other Parts of the *Eaſt Indies*, but not ſo much in Eſteem as this from the *Levant*, being of a darker Colour, more fœtid in Smell, and is not eaſily powder'd; tho' that from the *Eaſt-Indies* is more Purgative, eſpecially in Infuſion, but has not ſo much of the Aſtringent Quality ſo efficacious in Diarrhœa's or Looſeneſſes, and Dyſenteries or Bloody-Flux; and that Sort which is accounted the fineſt is very little Purgative, but is much preferable in all the Intentions of a Reſtringent, and for this Reaſon it is beſt in Fluxes of all Kinds.

The Purgative Quality of Rheubarb ſeems moſtly to conſiſt in its Gummy Parts, by reaſon it is drawn out beſt with watry Diſſolvents impregnated with a Lixivial Salt, as Salt of Tartar, or the like; and extreme Drying deſtroys it Purgative Quality; wherefore it is frequently order'd to be toaſted on purpoſe to make it leſs Purgative, and more aſtringent or binding; and nothing ſtrengthens the Stomach and Bowels more than this Drug in the Hands of a judicious Preſcriber: Nor do the Kidneys lie too remote for its Influences; for it frequently paſſes ſo much that Way as to diſcover itſelf in the Colour of the Urine: And upon this Account it is good in Obſtructions of the Reins and Urinary Paſſages, whether from Sabulous and Gra-

vefly Concretions, or otherwiſe; and in the Jaundice it almoſt paſſes for infallible.

The Price. The Price this Drug moſtly bears makes the Aſtringent Purge for Scouring either a high or low Price; for the Reſt of the Ingredients may be had for about 1 *s.* 8 *d.*; but Rheubarb coſts the Apothecaries (I mean the choice Sort) from 1 *s.* 6 *d. per* Ounce to 5 *s.* and ſometimes more. It is now worth about three Pounds three Shillings *per* Pound; but ſurely it has been cheaper when Mr. *Gibſon* order'd three Ounces in a Drench for this Purpoſe, Page 137, of his Book.

After the Uſe of the Aſtringent Purge, let the Horſe have ſome of the Cordial Ball in Red Wine or Beer, with a Nutmeg grated into it, and about an Ounce of Venice Treacle, or Mithridate, and a little common Treacle to make it taſte better; for in the Main, one ſhould ſtudy a Horſe's Palate as well as a Man's, ſeeing they are often much tenderer than human Bodies can be, by reaſon they cannot vomit, but with ſuch Difficulty as is enough to deſtroy the very Frame and Nature of them; tho' I have heard a Farrier ſay he could make a Horſe vomit any Time, and at laſt I obtain'd a Diſcovery of the Secret, which really is enough to make the D—l vomit; for 'twas a Bolus made of Sirreverence or Human Dung, begging the Reader's Pardon, which this fooliſh Fellow had a Way of forcing down the poor Creature's Throat with his Hand.

A Farrier's Vomit for a Horſe.

One would be ſurprized to find the old Farriers preſcribe ſuch out-of-the-way Medicines, (tho' their Mixtures deſerve not the Name of Medicines) particularly in this Caſe. *De Gray* tells us, that a Flux or Scouring proceeds from eating Feathers, Hen-Dung, *&c.* and is not content 'till he has made the Horſe ſwallow the Guts of a great Chicken for a Cure. But as the *Recipe* is not worth tranſcribing, I ſhall not trouble the Reader with it. However, leaſt the Aſtringent Purge before ſet down

down be thought too dear, I ſhall name an Aſtringent Mixture of a low Price.

Take of Roch-Alum, one Ounce; Armenian Bole, one Ounce and half; put theſe into a Quart of Milk, when they are powder'd, and ſtir it over the Fire 'till it turns to a Curd; then give it the Horſe all at once. The Aſtringent Mixture.

And I hope the Reader will remember the *Gum Arabick Water* as before preſcribed, and continue the Uſe of it for ſome Time after the Looſeneſs is ſtopp'd; for Example, I think a Week may be ſufficient; and if an Ounce of *Burnt Hartſhorn* in Powder be mix'd with each half Pail-full of ſuch medicated Water, it will ſtill make it better, and I think no Horſe will refuſe drinking it.

It has been obſerved, that both Human and Brute Creatures which die of the Flux, eſpecially if any Blood be mix'd with the Stools, their Inteſtines or Guts are mortified or gangren'd at leaſt three Days before their Death, and it is then that Thirſt is no longer troubleſome, and that the extreme Parts, as the Limbs, *&c.* grow cold and ſtiff.

Mr. *Gibſon* thinks the Bloody-Flux a Diſtemper to which Horſes are not ſubject, and with him *Solleyſell*; but other Authors tell us they have ſeen many afflicted with it; and as it is a Profuſion or Superabundance of Pancreatic and Bilious Juices, which being diſcharged from the Sweat-bread and Gall-bladder into the Inteſtines, cauſe an Irritation, and great Influx of Blood thither; I ſay, as this is the Caſe of a Bloody-Flux, I ſee no Reaſon why Horſes as well as Men may not be afflicted with it.

Laſtly, When there is Blood diſcharged by the Guts, give the following Powder in warm Claret, if you love your Horſe, *and would not loſe a Hog for a Half-penny-worth of Tar.* Dyſentery or Bloody-Flux

Another Mixture or Drink for a Looſeneſs or Flux.

Take Powder of Oyſter-Shells, three Ounces; Contrayerva Root, and Virginian Snake-Root, of each one Ounce; Cinnamon, and Tormentil-Root, of each half an Ounce; Saffron, and Cochineal, of each two Drachms. Powder all well, and mix for ſix Papers, to be given the Horſe two every Day in warm Red Wine or Beer for three Days, keeping him cover'd well and no Hay before him for two Hours after the Drink; and ſometimes may be added to each Doſe one Ounce of *Diaſcordium* with the Wine.

Cæliac Paſſion deſcrib'd.

Mr. *Gibſon* mentions a Lientery or Flux when the Chyle is diſcharged with the Excrements, which Diſtemper is common in Human Bodies; and is occaſioned from the Mouths of the Lacteals being ſtopt by ſlimy Matter, ſo that the Chyle cannot enter, but is forced forward, and voided with the Excrements. This Diſorder in Men is ſometimes call'd the *Cæliac Paſſion*, but I cannot believe Horſes are much ſubject to it, by reaſon their Exerciſe guards them from it.

The Cure of this Sort of Flux (according to modern Practice) is by warm *Aſtringents* only. Begin with the Aſtringent Purge before ſet down for a Lax or Scouring; after which, give the following Infuſion by a Pint at a Time every Morning while it laſts.

The Infuſion for a Chyle-Flux.

Take Zedoary Root, and Gentian, of each half an Ounce; Orange Peel, and Winter's Bark, of each, an Ounce; choiceſt Myrrh in Powder, half an Ounce; Flowers of Camomile, and leſſer Centaury, of each half a Handful; Mace, and Cloves, of each two Drachms: Beat all theſe groſly together, and infuſe them in a Gallon of good *Red Port*, if the Horſe is worth it, if not you may uſe *Strong Beer* in its Stead, tho' the firſt is much better if you will go to the Price of it, and have Judgment enough not to be impoſed upon by the Vintners.

When

When you uſe it, which may be after two Days cold Infuſion, you ſhould add to every Doſe you give the Horſe about two Ounces of *Syrup of dry'd Roſes*, and give it Milk-warm; but leaſt the Apothecaries impoſe ſome other Syrrup upon you in the Place of the Syrrup of dry'd Roſes, I ſhall ſet down a *Recipe* for an excellent Reſtringent Syrrup, which 'tis Pity but all Apothecaries and Farriers ſhould keep.

An Excellent Reſtringent or binding Syrup.

Take, Oak Bark, one Pound; Pomegranate Shells, Roots of Tormentil, and Biſtort, of each two Ounces; boil them in a Gallon of Spring-Water to three Pounds, or three Pints; ſtrain the Liquor, and let it ſettle 'till fine; which pour off as clear as may be. To the Liquor add Juice of Sloes, and Barbaries, of each a Pint; which boil and evaporate to one Pint; then add fine Sugar, two Pounds, and boil to the Conſiſtence of a Syrrup.

This makes a Syrrup ſo reſtringent and binding that it may be truſted to in Fluxes, even by itſelf, where ſuch Things are wanted, and ſo ſtrengthens the Stomach and braces the Fibres, that it will in Human Bodies (eſpecially in Children) cure Agues or Intermitting Fevers; however, a great deal of the Jeſuits-Bark may be ſpared, was this Syrrup contrived into all the Forms convenient for it, or the Bark made up into Bolus's with it.

Laſtly, I ſhall cloſe this Chapter with a Clyſter from Mr. *Gibſon* as order'd in a Bloody-Flux; tho' that Author very ingeniouſly confeſſes he never ſaw a Horſe ſeized with ſuch a Diſtemper, yet believes ſome may have it, as it is not inconſiſtent with the Oeconomy of that Animal.

The Clyſter is this, and I think as well contrived as poſſible where the Caſe is within the Reach of ſuch Things; and if it don't operate when given as a Clyſter, I ſee no Harm can accrue from its being given by the Mouth.

Mr. *Gibſon's* Reſtringent Clyſter for the Bloody-Flux.

" *Take, a Quart of Forge-Water, (the older, no doubt the better;) boil it in four Ounces of Oak-* " *Bark; two Ounces of Tormentil-Root; Balau-* " *ſtines or Pomegranate Flowers, and Red Roſe Buds* " *dry'd, of each a Handful; and to the ſtrain'd De-* " *coction add three Ounces of Diaſcordium, one Ounce* " *of Mithridate, and half a Drachm of Opium.*"

Inject it warm with a long Pipe, &c. but if it be given by the Mouth, which I think is the more effectual Method in ſuch Caſes, ſeeing (as I ſaid before) the Cauſe may lie more remote within the Inteſtines or Guts than the Clyſter can be injected with the longeſt Pipe of the Kind: Therefore, I ſay, when it is deſign'd for inward Uſe by the Mouth, you muſt only put in half the Quantity of the *Diaſcordium Mithridate*, and *Opium*, and then it will be an efficacious and ſafe Medicine to ſtop Purgings of any Kind.

I ſhall now proceed to give an Account of thoſe troubleſome Reptiles to which both Man and Horſe are ſo ſubject, that inſtead of devouring us when we are dead, I am ſurprized they do it not while we are living, to wit, Worms of all Kinds.

CHAP. XXVI.

Of Worms, Bots, and Truncheons.

Of Worms.

HORSES are exceedingly ſubject to Worms, Bots, and Truncheons. By Worms the Farriers underſtand thoſe which are bred in the Maw or Stomach; but there is great Reaſon to believe that no Worms are bred there, though many are of a different Opinion. For, as Mr. *Gibſon* obſerves, it is as hard for a Mouſe to live and ſubſiſt under a Milſtone while it is grinding Corn, as for Worms to live and ſubſiſt in the Stomach of any Animal, conſidering the Muſcular Action of this ſo ſenſible a Part of the Body, which according to the beſt Accounts

counts we have of the Faculty of Digeſtion, would certainly grind them to Pieces very ſoon. Therefore when Worms are caſt up by the Mouth and Noſtrils of Human Bodies, it may be ſuppoſed they could not abide the Heat and triturating Quality of the Stomach, ſo that they quit that Habitation, and make the beſt of their Way either upward or downwards. And I cannot ſay I ever took Notice of Worms vomited up, which were lively, but either dead or very near it. Yet they are often in the *Duodenum* or firſt of the ſmall Guts next the Stomach, for as ſoon as the Creature dies they riſe up thither; where being found upon opening the Carcaſs, it is erroneouſly concluded that they were bred there.

Bots are a Kind of ſmall ſhort and thick Worms, with great Heads, and ſmall Tails; they are moſtly in the *Rectum* or Gut next the Fundament; as the ſmall white Worms in Human Bodies, which we call *Aſcarides*, from ἀσκέω, *moveo*, to move, ſo termed from their continual troubleſome Motion cauſing intolerable Itching. Bots.

Truncheons are ſhort thick Worms of a pretty bigneſs, and have black and hard Heads. Truncheons.

" Monſieur *Solleyſell* takes Notice of a fourth " Sort of Worms which reſemble Wood-lice, only " they have fewer Feet, are of a deep reddiſh " Colour, velveted on the Back like a *Bat*, and " made up of ſeveral Folds; and theſe are the " Worms he believes are bred in the Stomach, " and abiding there deſtroy all the Nouriſhment; " ſo that a Horſe, if he be never ſo great a Feeder, " cannot thrive while they are in his Maw." And this Author farther obſerves, " that this kind of " Worms is oftentimes the Occaſion of a Horſe's " Death, by eating Holes through his Stomach; " and tells us that he has ſeen Thouſands of them " in the Stomachs of Dead Horſes." A fourth Sort of Worms.

Now, this Account ſeems to contradict and thwart what I have before advanced; but if the Reader will only conſider that, as the *Duodenum* or firſt of the ſmall Guts is ſo near the Stomach, ſo ſoon as the Creature dies, and the Motion of that Part ceaſes, the Worms mount up thither, where there is Plenty of Feeding, though before this, that Habitation was too hot for them: And indeed it is my Opinion, that when any Creature is near dying, and that the Power of the Stomach is nearly deſtroyed, theſe voracious Reptiles make their Way to, and abide in the Stomach; for I myſelf have ſeen a young Horſe's Stomach eaten quite through with Worms, though opened only the Day after he died.

All Animals are produced from Eggs.

It is agreed by all, and a received Axiom, that *all Animals are produced from Eggs*, as *all Plants are from Seeds*; and theſe *Ova* or Eggs being ſwallowed with the Food, and meeting with a proper *Nidus* in the Inteſtines or Guts of Animals, they are there hatched or brought to Life. And young Horſes are like young Children, more ſubject to Worms than full aged, or ſuch as are come to their Prime; by reaſon, in the latter, the digeſtive Faculty is ſo ſtrong that the very *Ova* themſelves are, as it were, parboiled and deſtroyed; whereas in the firſt, this Faculty is ſo cold and weak, as juſt to produce a proper Warmth to ſwell the Eggs as they paſs through the Stomach. Therefore when they get into the Guts along with the Recrements of the Food, they are ſooner brought to Life; but whether they are bred in the Stomach, or Guts, it matters not, provided we know of a ſafe and effectual Vermifuge, which will deſtroy them without doing hurt to the Animal whoſe Guts they are lodged in; and of this I am pretty confident, to wit, that if the following Methods and Medicines be uſed, they cannot fail of deſtroying all the Species or Breed of Worms.

The

The *Signs* are all thoſe which appear in a Colick; and the only Pathognomonick or inſeparable Symptom of the Worms whereby to know it from the Colick, is the Horſe's rubbing his Tail often, as if he had an itching Humour upon him, though at the ſame Time he has not any. The Signs.

Firſt, give the Horſe for three Mornings ſucceſſively *two Quarts of warm Ale-wort*; and the fourth Morning let him have the following Purging Drench. The Cure. Ale-wort good againſt Worms, and why.

Take of Aloes, one Ounce; Diapente, one Ounce and half; Cream, or Cryſtals of Tartar, one Ounce; Calomel prepared, two Drachms; mix, and with Syrup of Buckthorn, make it into a Ball, which may be wrought up to a Conſiſtence with Powder of Liquorice. A Purge to kill Worms.

The worm Wort is ſo pleaſant and grateful to the Worms, that they readily ſwill themſelves with it, even ſo full, that they will ſometimes come away with the Excrements or Dung without any other Remedy: But when the Purge comes upon them full-bellied, they cannot keep their Holds amongſt the Folds of the Guts, but are ſwept away, as Trouts, *&c.* with a Land-Flood.

After two of theſe Purges, and the Method preſcribed, let the Horſe reſt a While from Medicines; the Purges may be given about a Week aſunder: For Horſes cannot bear Purging twice in a Week without imminent Danger of Life, or elſe deſtroying their Conſtitution.

In a Week's Time after the Purges, give the Horſe *Æthiops Mineral*, in Manner following.

Take about a Pound of my Cordial Ball, (before it be too dry;) four Ounces of Æthiops Mineral; two Ounces of Coralline, and as much Syrup of Saffron as will make the Ball of a due Conſiſtence, which may be about two Ounces. Beat all well together, and give the Horſe about the Bigneſs of a large Pid- The Ball to kill Worms.

geon's Egg, every Morning and Evening before his Exercise, for a Fortnight.

An Account of Coralline.

Coralline, or the *Muscus Marinus* of *Dioscorides*, grows, something like the Moss of Trees, upon Rocks, Shells, and on Coral; the last Sort is accounted best, and may be known from the strong Marine Smell with which it is endowed, more than the other two Kinds: It is sold at most Apothecaries Shops, and is a very cheap thing; but for its Virtue in destroying Worms, it is not, though taken alone, inferior to many of the Shop-Compositions.

Worm-Medicines should be continued for some time, and why.

I advise that Worm-Medicines be continued for a considerable Time, at least three Weeks or a Month; for if this be not done, the smaller Sort will not be destroyed, by reason they so cover themselves in the Folds of the Guts, that the Medicine passes over them; for Self Preservation is inherent in every Creature, even from the highest Potentate to the vilest Reptile. Therefore, I say, let the Horse have of the *Æthiops Mineral*, *&c.* for at least three Weeks, and then it is almost impossible but the Worms must take in some of it; but if it be given for a few Days only, they will rather fast than suck up any of the Juices mixed with it.

Mr. *Gibson* frequently prescribes half an Ounce of *Mercurius Dulcis*; two Drachms of *Diagridium*, *&c.* with Aloes, for a Purge to kill Worms: But although I am very sensible that *Mercurius Dulcis* is an excellent Vermifuge, yet the Quantity here taken Notice of I think an Over-Dose, especially if two Drachms of *Diagridium* be given along with it. Therefore the Quantity is the only Objection, and is much liker to destroy both the Worms and Horse, rather than fix upon the former and spare the latter.

If you give *Mercurius Dulcis*, (which no doubt is a safe Medicine enough in good hands,) let it be in very fine Powder, and about two Drachms of it mixed with an Ounce of the Cordial Ball, and given the

the Horſe in a Horn of warm Ale the Night before you deſign to purge him with the Purge for Worms before-mentioned; and this is much the beſt Way, becauſe the Mercury will be doing Buſineſs all Night, and mixing itſelf with the Juices of the Guts, ſo that many of the Worms will be either killed, or ſo diſabled before the Purge operates, that they will not have Strength to withſtand the Waſh of it, but will float along with the Excrements, and be ejected in great Numbers.

I have not ſeen any ill Effects of giving *Mercurius Dulcis* of itſelf, though ſo long before the *Aloes* Purge as twelve Hours; yet I muſt confeſs that a Horſe, from the pendant Situation of his Head, may ſooner be put into a Salivation than Man: But it is the Quantity rightly judged and adapted to the Horſe's Strength which is the Thing; for though half an Ounce given by itſelf may put a Horſe into a Salivation, yet ſhall not two Drachms be able to effect it; and thus Purgative Medicines are managed ſo, that they may become Alteratives, which Term I have explained in ſome former Pages.

A Horſe ſooner Salivates than a Man, and why.

Although a Horſe happens to Salivate by the Uſe of *Mercurius Dulcis* of itſelf, yet is there no Danger, for, one or two Purges will take off the Running at his Mouth without Hazard; and if his Gums be ſore and Teeth looſe, they will mend of themſelves by giving him ſoft Food, *&c.* without the Help of any Thing farther than Purging him at due Intervals as aforeſaid. And this I know by Experience; for I had a Horſe that was very hard to purge, being the ſame that, in my Notes upon *Burdon*, I mention to have taken *two Ounces of Aloes, half an Ounce of Diagridium, two Ounces of Cream of Tartar, and forty Drops of Oil of Juniper, with Syrup of Buckthorn*, and with the Addition of a *Drachm* of *Mercurius Dulcis:* Which Doſe in reality is full much for two Horſes, I mean becauſe of the *Diagridium*. But before I ordered the Horſe

such a Purge, I was well acquainted with his Constitution, and what he could bear without Damage: For, in all Creatures, there is a peculiar Temperament or Disposition in some, which is not common to others, though of the same Species; and this is what we Term the *Idiosyncrasy* of Bodies, a Thing very necessary to be studied by all those who take upon them to prescribe Medicines, whether for Men or Brutes. And this is so self-evident that I need not insist farther upon it: For if a Physician (only of tolerable Skill and Judgment) has been employed in a Family for any considerable Time, he can easily tell the Danger any one of them is in, even from a bare Account of the Symptoms brought him by a Servant; and I am sure that his Prognostick in such Case shall ofener hit, than even when he himself shall visit a Stranger, whose Constitution, or rather peculiar Temperament or Disposition, he was before wholly unacquainted with. Now to return.

Idiosyncrasy of Bodies, what.

As I have prescribed *Æthiops Mineral* several times in this Chapter, it may not be amiss to set down the Manner of making it, which is done in the best and quickest Method as follows.

Æthiops Mineral, how to prepare it according to Art.

Take of *Crude Mercury* or *Quicksilver*, and *Flour of Brimstone*, of each equal Parts; melt the *Brimstone* slowly in an Iron-Ladle, and stir in the Quicksilver for some time till you suppose it well incorporated with the Sulphur; then take it off the Fire, and keep stirring while it is any thing like hot, or 'till it grows so cold that the *Quicksilver* cannot precipitate or sink to the Bottom of the Pan; when this is done, and that the Mass is cold, half the Rubbing will serve it afterwards, which ought to be performed in an Iron or Marble, not in a Brass Mortar.

The common Way of preparing *Æthiops Mineral* is by trituration, or grinding it in a Mortar for some Time, without melting it before-hand, as I have said; but unless the Person continue to rub the

the Mixtures for five or six Hours together, the Mass will not be sufficiently mixed, but the Quicksilver will remain in larger Globules than it should be; whereas the Business is to divide the Mercurial Globules as much as may be, and then they will do most Service.

Encomium upon Quicksilver.

I could say a great deal in Praise of *Quicksilver*, which is so admirably form'd by Nature, that it will intimately mix with most Metals, *Antimony*, *Iron*, and *Copper* excepted; and is itself the heaviest of all Metals excepting *Gold*, which is to *Quicksilver* as four to three. Many are the Preparations from this Prodigy in Nature, if I may be allowed the Expression: For it has eluded all the Skill of the most able Chymists in all Ages, who frankly confess their Inability to fix it; and from any of its Preparations you may again reduce it into its pristine State of Fluidity by the Force of Fire; and what was just now a safe, harmless, and efficacious Medicine, is in an Instant turned to the rankest of Poisons, and all this from only altering its Form and Fluidity. And whosoever considers this thoroughly must allow that the Operation of Medicine is truly Mechanical; and though our finite Capacities are not able to discover with any Certainty the true Causes of the Distempers; yet so far as we can trace the Operation of Medicine, it appears demonstratively Mechanical: And he who at Random launches into the Practice of Physick without being first thoroughly acquainted with the Properties of Body, must make strange Havock with Mankind; neither can he himself have the real Satisfaction which is enjoy'd by the thinking Part of our Species.

As I have run into a Digression upon the Subject of *Quicksilver*, I cannot help taking Notice in this Place of *Antimony*, which is of such common Use, especially among Farriers, that they make nothing of giving an Ounce or two a Day for some Time together.

Antimony

Account of Antimonial Preparations.

Antimony is a heavy ſolid, metallic, brittle Subſtance, of a Lead Colour, with long ſhining Streaks, fuſible or made fluid by Fire, but not ductile or malleable. It is found in *Italy*, and ſeveral of the Provinces in *France*, as *Auvergne*, *Poictou*, *Britany*, and others.

Among the Ancients, *Antimony* was uſed to dye the *Supercilia* or Eye-Brows, &c. black; and accordingly we read in Scripture, that the wicked Queen *Jezebel*, in order to charm the King her Husband, painted her Eyes (by which I ſuppoſe is only meant the Eye-Brows) with *Antimony*; and the Women who uſed that Practice are alſo reproved by the Prophets. And from thence it was that this Mineral got the Name of γυναικεῖον. But altho' Quickſilver was by the Antients rank'd among Poiſons, I mean by thoſe who mention it, for the Name of it is not found in the Writings of *Hippocrates*, whence it is probable that it was not in Uſe in his Time;) yet *Antimony*, its Preparations and Virtues are often ſet forth both by *Galen*, *Hippocrates*, and *Dioſcorides*, and others of more modern Date. And about the twelfth Century, a *German* Benedictine Monk, *viz. Baſilius Valentinus* publiſhed a Book under the Title of *Currus Triumphalis Antimonii*, wherein he extols the Virtues of that Mineral, and its Preparations, in the Cure of an infinite Number of Diſeaſes. And in the Century following, *Paracelſus* made the Fame of *Antimony*, become ſtill more univerſal. However, Phyſicians, for ſome Time afterwards, with great Warmth and Virulence diſputed concerning the beneficial and deleterious or poiſonous Qualities of this Mineral; but at preſent all agree, that the Preparations from it are very powerful and ſafe, (provided they are in good Hands;) and acknowledge two Virtues in it which depend upon its different Preparations, one operating either by Vomit or Stool, the other by Sweat; for, in Fact, all Medicines prepared from

Antimony

Antimony do either purge upwards or downwards, or are Diaphoretick and Sudorifick.

Ward's Pill and Drop are moſt certainly Preparations from *Antimony*; and I could eaſily tell the Reader of a *Pill* and *Drop*, of like Operation with thoſe Quack Medicines, which may be prepared from *Antimony*. But as no one Medicine can ſuit all Conſtitutions, tho' many that are robuſt and ſtrong may for a while ſtand the Shock of theſe violent Emeticks, &c and find Relief for the preſent; I ſay, for this Reaſon I forbear the Mention of any Medicine as a Catholicon, rather chooſing to treat of Diſtempers in a Way different from the Gentlemen who ride Poſt for Bread, and ſtuff the News-Papers with their fulſome Nonſenſe. *Ward's Pill and Drop Preparations from Antimony.*

I ſhall cloſe my Remarks upon this valuable Mineral in Phyſick, with taking Notice, that in a Manner all the different Preparations from *Antimony* how ſevere ſoever they are alone, may be ſo managed in a ſkilful Hand, as to operate little, or perhaps not at all in the *Primæ Viæ* or firſt Paſſages, which are reckon'd the *Stomach Inteſtines*, and their *Appendages*; nor will their Operation be perceived until they arrive at the ſmalleſt Paſſages. And it is then thoſe mighty Things are to be effected, which cure the Gout, Pox, Evil, &c. in Men, which are too much the *Opprobrium Medicorum*; as alſo the Farcin, &c. in Horſes. And it is certainly the want of this Knack of converting the moſt efficacious Catharticks into Alteratives, that makes the common Practice in chronic Caſes ſo little to the Purpoſe. And no doubt but at this Time there are, in the Hands of ſome Empiricks, Medicines upon this Baſis which are too much a Shame to Learning and Education. But how can it be otherwiſe, when Practice is calculated rather for the Eaſe and Diſpatch of a great deal of Buſineſs, than to cure Patients; whereby Caſes of Difficulty are not worth the Care of any but Quacks, and ſuch as venture at Random. I now beg the

Reader's

Reader's Pardon for this Digreſſion, and I hope he will the more eaſily grant it, by reaſon that *Quick-ſilver* and *Antimony* have ſo large a Share in Medicine, and may be managed and contrived ſo as to anſwer very different Purpoſes. Now to return to the Worms in Horſes.

I believe I need not name any more different Forms of Medicines for the Worms, ſeeing what I have ſaid before is abundantly ſufficient, if the Owner of the Horſe have but Patience enough to continue the Uſe of the Preſcriptions for a conſiderable Time, by reaſon the Guts of a Horſe are no leſs than thirty-five Yards long from the Stomach to the Fundament.

Sublimate Mercury and Precipitate of dangerous Effects, if given inwardly.

Some Farriers uſe *Black-Soap*, *Alum*, *Burnt-Vitriol*, and the like, to kill Worms; nay, they even venture to give *Sublimate Mercury*, and *Precipitate*; which is moſt certainly an erroneous Practice, eſpecially the two laſt Preparations which are exceeding dangerous. For *Sublimate Mercury* is a moſt deadly Poiſon; aud altho' the Quantity may be ſo proportion'd that its Effects ſhall not immediately be felt; yet the poor Horſe's Conſtitution and Habit of Body muſt be very much weaken'd and impair'd by it. And as to *Precipitate*, tho' it is ſometimes in obſtinate Caſes (when deflagrated with Spirit of Wine) given inwardly, yet I adviſe every one to be cautious in the Uſe of ſuch Things.

Now altho' the famous Worm Doctor, Mr. *John Moor* (who pretended to a Secret againſt Worms, tho' as long as the May-Pole formerly in the *Strand*) were yet in being, I am confident that *Mercurius Dulcis*, and the *Æthiops*, are as good Medicines to deſtroy thoſe troubleſome Creatures as any Compoſition he was able to find out. And as this Gentleman happen'd to die juſt at the Time I am treating of Worms, for which his *Peſtle* and *Mortar* in *Abchurch-Lane* made ſo much Noiſe, I ſhall conclude with a Prediction of the juſtly celebrated Mr. *Pope*, relating

relating to this so immortal Man, which is, or will in a very short Time, be fulfill'd.

O! Learned Friend, of Abchurch-Lane,
Who sets our Intrails free;
Vain is thy Skill, thy Powder vain,
Since Worms *will eat even thee.*

CHAP. XXVII.

Of Pain in the Bowels from sudden Accidents.

BY Pain in the Bowels from sudden Accidents I would be understood to mean those Disorders which are occasion'd thro' the Carelessness of the Owner, Hostler, or Groom, who give them cold Water while they are hot, nay, perhaps, ride them into it up to the Mid-side to wash them, rather than be at the Pains to heat a little to clean the Legs from Dirt, *&c.* and in about an Hour's Time afterwards to rub them dry, which certainly is the best way to manage a Horse after a hard Day's Work. And it is by the Omission of this last Piece of Advice, that many of those serviceable tho' dumb Creatures turn Broken-winded, Phthisicky or Consumptive, or else are greased intolerably. But as the Brain, Lungs, and Guts, are from their Situation and Make most susceptible of Impressions; I say, for this Reason these Parts are mostly the Scene of Action when the Pores are suddenly stopp'd by Cold, *&c.*

Washing a Horse's Legs with warm Water better than cold.

It would be thought an incredible Story to some, if I should tell them, that *insensible Perspiration*, or the Matter which we lose by a kind of insensible weating, has been proved beyond Contradiction to xceed all the other Evacuations by Stool, Urine, pitting, *&c.* put together; and that in *Italy*, as *anctorius* very accurately observed, this insensible erspiration is so great, that in fifty-one Days a

Insensible Perspiration.

Man

Man loſes that Way, *viz.* thro' the Pores of the Skin, even the Weight of himſelf. And I am ſure that a Horſe muſt loſe more in Proportion to his Bulk by inſenſible Perſpiration than Man, by reaſon that the other common Evacuations are not enjoy'd by him in ſo great a Degree as in us; particularly the Evacuation by the Mouth is much leſs in a Horſe than a Man: And if Nature be overburthen'd, this Creature cannot diſcharge himſelf by Vomit, therefore is he furniſh'd with a Hide exceeding porous in order for a Diſcharge of any peccant or exuberating Matter which might diſturb the Vital Frame. And that this is the Caſe is plain from the Uſes ſuch Leather is put to; for it is not of ſo firm a Contexture as to ſerve for Shoe Soles, or the like.

The Subject of *Inſenſible Perſpiration* is moſt certainly of the utmoſt Concern, and ought thoroughly to be underſtood both by Phyſicians and Farriers; and they ought not only to acquaint themſelves with the Nature of this Evacuation, but likewiſe thoroughly to know by what Means it is to be promoted or leſſen'd, according to the ſeveral Exigences of the Creature they have to deal with, either for the Preſervation or Recovery of Health.

Inſenſible Perſpiration is either made by the Pores of the Body, which is all over perſpirable, and cover'd with a Skin like a Net; or it is perform'd by Reſpiration thro' the Mouth, which laſt in a Man in Health amounts to about a half a Pound in the Space of twelve Hours, as has been made to appear by breathing upon a Glaſs for that Time.

Inſenſible Perſpiration hindered, cauſes Gripings, &c.

By the Pores we are to underſtand the Excretory or diſcharging Ducts or Pipes of the cutaneous Glands or Glands of the Skin, both thoſe internal, as of the Guts and *Viſcera*, and the common Coverings of all the Muſcles; as well as the external Pores of the *Cuticula* or outward Skin. And Nature has ſo provided, that if by any external Cauſe this neceſſary Evacuation is hinder'd in any one Part, it

it is always increaſed in another, or elſe a Diſtemper will enſue; for which Reaſon, when the Coldneſs of the external Air (which more immediately affects the outer Skin) leſſens the *Inſenſible Perſpiration* that Way, either the ſenſible Evacuations are increaſed, as commonly the Urine; or elſe greater Quantities are carried off by Reſpiration from the Lungs and Parts about the Mouth; or, laſtly, perſpired into the Cavities of the Guts; which afterwards are diſcharged by breaking Wind either upwards or downwards: For, as long as the Impulſe within remains the ſame, wherever there is the leaſt Reſiſtance, thither will always the greateſt Derivation of perſpirable Matter be. And from hence it is that we ſo frequently find (when the Body is more than uſually expoſed to external Colds) Gripings, and great Uneaſineſs in the Bowels, which proceeds from nothing elſe but becauſe ſome Part of the perſpirable Matter, that ought to have paſſed the outer Skin, finding an opener Paſſage within is thrown off that Way. And to this Purpoſe it is likewiſe very obſervable in Dogs, whoſe outer Skin is very little porous, *viz.* in hot Seaſons, and upon much Exerciſe, whereby the more than ordinary Motions of the Body occaſion greater Attritions or Fretting off, of their circulating Fluids, which produce larger Quantities of perſpirable Matter, that theſe Creatures throw off a vaſt deal from their Lungs in Reſpiration and the Parts about the Mouth, inſomuch that their very Breath appears like thick Smoke.

Lewenhoeck pretends by the Help of his Glaſſes, (though we have better now than ever he had, Thanks to the Incomparable Sir *Iſaac Newton*, for the Improvements;) I ſay, this nice Diſcoverer views the Texture of the *Cuticula* or outward Skin to be Scaly, and that thoſe Scales cover one another in ſeveral *Laminæ* or Plates, more or leſs according to the different Thickneſſes of the Scarf-ſkin in the ſeveral Parts of the Body; and in the Compaſs of

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one Cuticular Scale he ec'tons there may be 500 Excretory or diſcharging Channels, and that a Grain of Sand will cover one Hundred twenty-five Thouſand Orifices through which we daily perſpire.

Warm Bathing promotes Perſpiration, and is good againſt Pains in the Bowels, and Gravel in Men.

In human Bodies when Perſpiration is hindered by any Accident, as Cold, *&c.* nothing comes up to warm Bathing for promoting this ſo neceſſary Diſcharge. For by it the internal Bowels are refrigerated, according to *Sanctorius*'s Expreſſion, and in Nephritick or Gravel-Pains, it has not its Equal. Therefore as Colds are ſo common and frequent amongſt us, it is Pity (eſpecially for the Uſe of large Families, who do not reſide near the naturally warm Baths, or the City of *London*;) I ſay it is Pity we have not more Conveniencies for Artificial Bathing, when Caſes of the utmoſt Conſequence require it.

The Cure of Pains in the Guts from Accidents.

What I have order'd before in the Chapter of the Colick, is moſtly proper for Pains in the Guts from ſudden Accidents. However, I ſhall order a proper Drink for the Purpoſe, and then proceed to take an Account of the *Yellows* or *Jaundice*.

Firſt then, let the Horſe be taken into ſome warm Place, where you can fire ſome Straw or Furz near him, and turn him about it, ſo that he become pretty warm; when this done, and his Stall well bedded, let him have the following Drink.

A Drink for Pain in the Guts from Accidents.

Take Venice Treacle, or Mithridate, two Ounces; Matthews's Pill, two Drachms; Camphire, ſix Grains: Mix and diſſolve them in a Quart of White Wine, or Beer, and give it the Horſe, keeping him warm cloathed for 48 *Hours after.*

I own to have Copied this from Mr. *Gibſon*, though I have not put in his whole Quantity of *Mithridate*, or *Venice Treacle*, thinking it rather too much; and if to the Drink aboveſaid, be added a little of the Cordial Ball, it may be ſtill better.

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The Drink, or as the Farriers call it, this Drench, is well contrived, and the *Camphire* makes it a very powerful Diaphoretick or Promoter of Sweat; for it is the moſt efficacious of that Kind yet known in the whole *Materia Medica*, its great Subtilty diffuſing it through the very Subſtance of the Parts, as ſoon almoſt as the Warmth of the Stomach ſets it in Motion: But its greateſt Heat requires plentiful diluting with ſmall Liquors. Therefore, let the Horſe have warm white Water offer'd him now and then, that Sweating may be encouraged. Camphire a Diaphoretick.

The Drops which make ſo much Noiſe now-a-Days, by the Title of *Bateman's Pectoral Drops*, are nothing but a Compoſition of *Spirit of Wine*, *Opium*, and *Camphire*. And from hence it is, they eaſe Pains and promote Sweat. But nothing of the Kind ſhould be uſed without good Advice; ſeeing that thoſe Things which are the moſt efficacious Medicines, in ſome Caſes may, in the Hands of the Ignorant and Vulgar, turn to a very bad Account. *Bateman's* Drops, what they are compounded of.

If the Horſe be bound in his Body, let him have the Emollient Clyſter preſcribed for the Colick, and cauſe him to retain it as long as poſſible, by holding his Tail down to his Fundament. A Clyſter.

Mr. *Gibſon* orders a Horſe that has Pain in his Bowels, occaſioned by ſudden Accidents as aforeſaid, to be buried in a Dunghill all but his Head, for that no one Thing requires Sweating more than this, and that it may be ſuſpected, the Horſe from drinking cold Water while he was hot, may prove ſounder'd in his Cheſt. And this Author imagines the Caſe is ſo, becauſe the Horſe works and heaves in his Flanks all of a ſudden, after ſuch Accidents and Miſmanagements. Mr. *Gibſon* adviſes to bury a Horſe in a Dunghill, when pain'd in the Bowels.

Now I take this Heaving of the Flanks to proceed from his inward Heat; for when the Pores are ſuddenly cloſed up by the cold Water, and the perſpirable Matter hinder'd from flying off that way, very great Changes muſt of Conſequence happen in

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the Blood, by the Mixture of such heterogene Particles, which raise a Fever with great Sickness and Fainting; and when any Creature is sick or faintish, they breathe shorter and thicker, which as I apprehend is the Reason of the Heaving, and not any thing that strikes to the Horse's Heart, (as the vulgarly receiv'd Opinion goes) which causes Foundering in the Chest.

As to Burying in a Dunghill, according to Mr. *Gibson*'s Method, I cannot think it will have any better Effect than what I before advised, to wit, making a Fire of Straw or Furz in some Place, so that you may turn the Horse round about near it, and with Cloaths put him in a Sweat as much as if he was buried in a Dunghill.

CHAP. XXVIII.

Of the Yellows or Jaundice.

THE *Jaundice* or *Yellows* is a Distemper, to which both Man and Beast are exceedingly subject; and notwithstanding this, some Authors upon Farriery omit the Mention of it; more particularly Sir *William Hope*, in his *Compleat Farrier*, never names the *Yellows* in Horses, as I can find.

The Signs. The Signs or Symptoms of the *Yellows*, are a Dullness or Sluggishness of the whole Body, the Horse seems to breathe with Difficulty, his Heart beats slower than when he is in Health; *Lastly*, he loses his Appetite and becomes poor, lean, and liker a Dog-Horse than one fit for Business; and the Inside of his Eye-Lids, and Eyes themselves appear Yellow; also Saffron-colour'd Urine, *&c.*

The Cause. The Cause of the *Yellows* or *Jaundice* is often from a Stone in the Gall-Bladder, or rather the *Ductus Communis Choledochus* or common Gall-Pipe, or else in the *Ductus Cysticus* or *Porus Bilarius*; which two last when they unite, form the common

common Gall-Pipe, that empties out the Bile or Gall into the lower Part of the first of the small Guts. So that when any of these are obstructed or stopped up by fabulous or gravelly Matter, or by any slimy or viscous Substance, the Gall or Bile is forced into the *Vena Cava*, instead of passing into the Guts.

The Use of the *Bile* or *Gall* is design'd by Nature to blunt or sheathe the Acids of the Chyle; because they, being entangled with its Sulphurs, thicken it so that it cannot be sufficiently diluted by the *Succus Pancreaticus* or Juice from the Sweet-Bread, to enter the Lacteal or milky Vessels. And this appears not only from the *Analysis* of the Bile, which yields more of a *Lixivial* than of a *volatile Alkaline Salt*, but also from what has been found by Experiment, to wit, that of the great Quantity of Acid Salts among the Aliments in the Stomach, there never could be found any in the Chyle, after it had pass'd the *Duodenum* or first Gut: And because some Chyle is always passing thro' the *Duodenum*, it was necessary that the Bile or Gall should be continually poured into it by the *Ductus Hepaticus*, otherwise called *Ductus Choledochus*: And a greater Quantity of Aliments requiring a greater Quantity of Bile, it is contrived by the *Divine Artificer*, that the Stomach should press the Gall-Bladder according as it is distended, and requires the Mixture of that Liquor.

The Use of the Bile or Gall in Animals.

Secondly, the *Yellows* or *Jaundice* proceeds from Obstructions of the Hepatick or Liver-Glands, which prevent the Gall from being duly separated by them from the Blood. And sometimes, especially in Human Bodies, these Glands are so indurated or hardened as never afterwards to be opened, but elude the Skill of the ablest Physicians, and resist the Force of the strongest Deobstruents. Nay, these Glands are often, in hard Drinkers, so parboiled by the long continued use of spirituous Liquors, of which we may reckon Wine and Ale two, (although the *Legislator* at present rank these under

Hard Drinking, what it causes in Human Bodies.

under another Tribe;) I ſay the Glands of the Liver which ſeparate the Bile, are in theſe Caſes ſo ſtopped, that they ſtraiten the Motion of the Blood through that *Viſcus* or Bowel, and that to ſuch a Degree as forces it ſo ſtrongly into the Gaſtrick Arteries, (which go, or branch off from the *Hepatick*,) that it breaks thro' into the Stomach. And from hence it is ſuch Unfortunates are ſubject to vomit Blood, in the laſt Stages of their miſerably ſpent Lives; for this Symptom is a very fatal one, I can aſſure them, and ſuch as does admit of a Mixture.

The Cure. If the Jaundice ſucceeds the Colick, as is often the Caſe, then it is proper to give the following Mixture.

A Purge for the Jaundice. *Take Turkey Rheubarb in Powder, one Ounce and half; Engliſh Saffron in Powder, two Drachms; Aloes called Succotrine, one Ounce; Syrup of Buckthorn, as much as is ſufficient to make it into a Ball*; which may be given the Horſe in a Morning, and about a Pint of warm Ale upon it.

You muſt not expect that this Purge will operate much, nay perhaps not at all in ſome Conſtitutions; yet it will do great Service in the Jaundice, by promoting other, though inſenſible Diſcharges as well as carry the Diſtemper by *Urine*. But if *Rheubarb* be thought too dear or chargeable, it may be omitted, and more *Aloes* added. Yet the Medicine cannot be ſo effectual by ſuch Management; and, I can aſſure the Reader, I ſtudy as much as poſſible, not only ſuch Drugs as are moſt ſerviceable in the Diſorders I treat of, but likewiſe the Charge of each Preſcription, that it may not exceed the Bounds of Horſe-Phyſick.

If the *Yellows* or *Jaundice* comes of itſelf, the Colick not preceding, give the Horſe the aforeſaid Purge with *Rheubarb*; after which let him have the following *Infuſion*.

Take

Take Salt of Tartar, two Ounces; Turmerick, three Ounces; Saffron, and Soap of Tartar, of each half an Ounce; Filings of Iron, three Ounces: Mix these in about a Gallon of Ale, and infuse for three or four Days in a Stone-Bottle, or the like, giving it a Shake now and then; and let the Horse have a Pint every Morning Milk-warm while it lasts, straining it off as you want it. Infusion for the Jaundice.

A great many are fond of the Ashes of burnt Broom, for the Cure of the Jaundice and Dropsy: And we meet in the Chymical Shops, with these Kinds of fixed Salts of a great many Plants, and the common Prescriptions of some Gentlemen of the Faculty, who practise in the specifick Method, take Notice of the different Kinds: But such may rest satisfied that those dextrous and conscientious Artificers the Chymists, can furnish us with a *Lixival Salt* of any Plant we want, made from the *Cineres Clavellati* or Pot-Ashes. And indeed if this was the greatest of their Impositions it would be well enough; for, let the Plant be what it will before 'tis reduced to Ashes, the Fire brings it to that Texture and Make of Parts into which it reduces any other. So that a Salt made out of the Lixivium of any Ashes whatever, will be always the same. And they who are incredulous herein may try Experiments ten thousand Ways, if so many can be invented, but will never find any specifick Difference. And therefore, *true Salt of Wormwood* is not more effectual in stopping Vomitings or Convulsive Twitchings of the Stomach, than Salt of Tartar; and of this I have been often convinced upon many and repeated Trials. No specifick Difference, between Salt of Wormwood and Salt of Tartar.

The *Soap of Tartar*, &c. in the aforesaid Infusion, operate powerfully upon the Obstructions in the Liver, which are the Cause of the Jaundice, and help to carry the offending Matter off by Urine. And as the Term Diuretick is oftener used than understood, I shall give the Reader a succinct or short

Account of the Operation of Diuretick Medicines. And firſt,

Diuretick Medicines, their Operation explained.

Under the Term *Diuretick* may be comprehended all thoſe Medicines whoſe moſt remarkable Properties appear in their Increaſing the Diſcharge by Urine, or which are ſuppoſed to have any Power in removing Obſtructions of the urinary Glands, or Paſſages, from what Cauſe ſoever, whether *Humours*, *Gravel*, or other offending Matter. And in this View, Diureticks come under theſe following Kinds; to wit, they are either ſuch as ſoften and lubricate the Fibres compoſing the urinary Glands and Canals, by which they yield and relax into their due Dimenſions and Capacities; of which Kind are all Emollients already explained: Or they are ſuch as by their attenuating and deterſive Properties, rarefy and thin viſcous or ſlimy Humours, and adhere to, and carry them along in the Paſſages: Or again, they muſt be ſuch as have a Power of ſo altering the Craſis or Mixture of the Humours, as to fit thoſe to paſs, which could not get through before; and of this Kind is the *Soap of Tartar* mentioned, as well as all the Tribe of *Lixivials* and *fixed Salts*. But, without venturing too far, from the Compaſs here allotted, into the Nature of Secretion, it may be proper to take Notice, that the thinner Separations increaſe in Proportion to the Blood's Velocity: For the Swiftneſs of its Motion not only keeps the Parts more divided, but alſo brings them oftener to the ſecretory Orifice; and this every where is that which takes off the thinneſt of the Blood at that Part. Some of the viſcid and thicker Secretions requiring, for the ſame Reaſon, a vaſt Check of the Blood's Motion before they can be perſormed; that is, before the Blood has obtained ſuch a Conſiſtence by the Slowneſs of its Motion, that what is to be ſeparated is the thickeſt at that Part. If therefore from any Cauſe the Blood does not move with its due Velocity, its Parts will attract one another, and make the whole

too

too thick to part with any thing by the Kidneys, or at leaſt ſo much as it ought. And herein Nature has in a very wonderful Manner provided againſt this Inconvenience, by ſo near Situation of the Kidneys to the Heart, that the Motion of the Blood may not be retarded when it comes to them, unleſs it moves ſlower through the Heart itſelf. And in ſuch Caſe, it muſt of Conſequence move ſlower than it ſhould do near the Kidneys.

From what has been ſaid it appears, that ſuch things are Diuretick or operate by Urine, which not only ſtimulate the Blood's Motion, by their Irritation of the Solids and quickening their Vibrations; but are ſo ſubtile, as to keep the Blood in as Fluid a State as poſſible. Therefore, *Lixivial Salts*, as *Soap of Tartar*, and the like, in the Infuſion for the Yellows, are of ſuch a Nature, that they hinder ſuch Particles of Blood from coming into Contact which would make them cohere. And on this Account it is, that in all ſluggiſh and viſcid Habits, where the Blood tends to too much Thickneſs, ſuch things promote the urinary Diſcharges.

There are ſundry Kinds of *Diureticks* more than what I have mentioned, but they all act in a Mechanical Way; to wit, either by adding to the Motion of the Blood, or by encreaſing its Salts, of which Sort are all the Plants of the Mallows-Kind: And Dr. *Grew*, a moſt faithful Recorder of Experiments of this Nature, obſerves more Salts to be in Plants of this Kind, to wit, ſuch as ſeem of a mucilaginous or ſlimy Contexture, than in others which diſcover it more upon the Palate. And if Nature be the beſt Compounder, thoſe Plants of her Production which have theſe Salts wrapt up in a kind of Mucilage, muſt be the beſt that can be contrived for carrying off ſabulous or gravelly Concretions, in the Kidneys of Human Bodies: For, at the ſame time that Salts are added to the Blood, by the Exhibitions of Decoctions of Marſh-Mallows, or the like; theſe are ſo inveloped or wrapt up in a Muci-

What kind of Diuretics proper in the Gravel in Men.

lage or ſlimy Matter, that the Ureters are not hurt by the Gravel, as it paſſes along from the Kidneys to the Bladder. I ſhall only obſerve one Thing more, and then return to the Yellows in Horſes.

It has been a long Diſpute, how ſome Things which manifeſtly paſs off by Urine, can do it in ſo ſhort a Time as they are often obſerved; eſpecially thoſe of the Turpentine Kind, which will very ſoon diſcover themſelves by their Smell (in which no Body can be deceived) in the Water. To explain which, would take up too much Room in this Place, neither doth it ſeem greatly to our preſent Purpoſe to determine ſuch Difficulties. However, thoſe who have Time and Leiſure may abundantly ſatisfy themſelves in theſe Points, as well as how it happens that large Quantities of Liquors drunk ſuddenly make their Way through the Kidneys to the Bladder in ſuch ſhort Spaces of Time: I ſay an Account of this is given in a handſome Manner by Dr. *Quincy*, in his *Explanation* upon the *Aphoriſms* of *Sanctorius*.

I am of Opinion, that as the Yellows in Horſes moſtly proceed from a Diminution or Decay of the Animal Salts contained in the Blood, therefore the Addition of ſuch kind of Salts muſt reſtore the Creature to Soundneſs of Body; and this is performed by *Millepedes* or Wood-lice, as well as the white End of Gooſe-dung; for (as I have ſaid before) this Part alone of the Dung, contains the Animal Salt of the Creature from whence it comes; the chaffy or black terrene Part being of no Uſe at all in Medicine. So that if you add to the Infuſion for the Yellows a *Pint* of *Millepedes* bruiſed, (but they ſhould be freſh, for the old, commonly kept in the Shops, are worth little,) I ſay, if you add theſe, or a good Quantity of the White of Gooſe-dung, it will make the Thing ſtill more effectual.

The *Jaundice* or *Yellows* in Horſes is very eaſily cured, provided the *Viſcera* be ſound. And they have this Advantage over the human Species, to wit,

wit, that if they have the Jaundice, it moſtly proceeds from a Diminution or Want of Animal Salts, as I have before hinted; and not from Schirrous or hard knotty Tumours of the Liver, which is common to Men who have followed the Trade of Tippling too long, and whoſe Conſtitutions, in ſuch Caſe are almoſt paſt Help.

Caſtile Soap good in the Jaundice.

I am fully perſuaded, that *Caſtile Soap* diſſolved in white Wine, or even in Beer, will cure moſt Jundices or Yellows; tho' this indeed is from a fixed vegetable *Salt* wrapt up in an oily Subſtance. And I have been credibly informed, that half a Drachm of *Caſtile Soap* diſſolved in a Glaſs of *White Wine* was (from ſome Experiment in *Bedford-Houſe*) eſteemed a great Secret for provoking *Urine* in the Jaundice and Dropſy in Human Bodies.

Thoſe, who have a Mind to try it upon a Horſe in the Yellows, may mix an Ounce in two Quarts of Beer, and give it at four Times, a Pint a Day, either warm or cold 'tis equal, and let the Horſe have Exerciſe: For the Jaundice cauſes a ſluggiſh Lazineſs either in Man or Beaſt; therefore Exerciſe is proper to hinder the Fluids from running into preternatural Coheſions, which was the Occaſion of the Diſtemper.

There is not any Perſon, who has treated more largely and well upon the Jaundice, and Diſeaſes of the Liver in human Bodies, than my *quondam Præceptor*, whom all *Europe* muſt acknowledge one of the Chiefs of his Profeſſion, to wit, the learned and truly worthy *Herman Boerhaave*, Profeſſor of Phyſick at the Univerſity of *Leyden*.

Æthiops Mineral good in the Jaundice.

Laſtly, I adviſe (for it will anſwer when moſt Anti-icterick Medicines, or Medicines againſt the *Jaundice* have fail'd,) the Uſe of *Æthiops Mineral* for ſome conſiderable Time. And then I am pretty ſure it will do, unleſs the Obſtructions be very obſtinate, and the Liver grown hard and horny; in which Caſe nothing will be able to remove the Diſeaſe.

Before the *Æthiops* let the following Purge be administred,

A Purge for the Jaundice.

Take ten Drachms of Aloes, one Ounce of Cream of Tartar, half an Ounce of Caſtile Soap, two Drachms of Saffrons in Powder; and with Syrrup of Buckthorn make it into two Balls by the Addition of a little Powder of Liquorice.

Let the Horſe have one of theſe Doſes, (I mean two Balls for a Doſe) before the *Æthiops*, and I think it will be ſufficient to ſcour off the ſlimy mucous Matter, which may hinder the Bile or Gall from being diſcharged into the Guts, and mixing with the Chyle, the Acids of which, it is by Nature deſigned to blunt and make ſmooth.

The *Æthiops* Mineral may be given in the following Manner, to wit,

Æthiops Mineral Ball.

Take of my Cordial Ball, one Pound; of Æthiops Mineral prepared as aforeſaid, three Ounces; of Caſtile Soap, two Ounces; of living Millepedes, one Pint; of Syrrup of Saffron, three Ounces: Mix, and give the Horſe the Bigneſs of a ſmall Egg once or twice a Day, before his moderate Exerciſe, for three Weeks.

I know it is a Diſpute with many, whether any of the Quickſilver in the *Æthiops* taken by the Mouth get into the Maſs of Blood; and theſe Gentlemen bring for Argument, that the Force and Heat of the Stomach are not ſufficient to ſublime it in order to paſs that Way. However, I am convinced from manifold Experiments, that *Æthiops* is an excellent Medicine in ſkinny Diſorders, which lye even at the outermoſt Skirts of Circulation. And why it ſhould perform theſe Cures without any of its Particles (how minute ſoever) getting into the *Blood*; I ſay, this is a Myſtery not to be unfolded, unleſs we have Recourſe to a Doctrine, ſomething like

like that of Sir *Kenelm Digby*'s of the Virtues of his *Sympathetic Powder*, which he made ſuch a Stir about, altho' it was nothing but a little calcined or burnt Vitriol, which, ſtrewed upon the Wound, ſtopt the Flux of Blood, and Nature perform'd the Cure afterwards, by Means of the Balſam of the Blood itſelf, which will any time do without the Help of Ointments, where the Fluids and Solids are in a healthful State; and this may be obſerv'd upon *Plants*, between which and human Bodies, in ſeveral Reſpects, there is a great Analogy, to wit, that when you wound a *Tree*, by cutting away ſome of its Bark or Subſtance, in a few Years that Loſs will be repaired by Nature, without any Help from the Gardener. And juſt thus it fares with recent or freſh and green Wounds as they are called, when they happen in a fleſhy Part of the Body; for they will heal ſooner of themſelves, provided the Part be kept at Reſt, without, than with any Application whatſoever.

Plants and Animals, their great Analogy.

I ſhall now proceed to the Diſtempers of the *Reins* and *Bladder*.

CHAP. XXIX.

Of Diſeaſes of the Reins, and Bladder.

I NEED not deſcribe the *Kidneys* of a Horſe, no more than any other of the Parts of this Creature, ſeeing it is ſo well perform'd to my hand by Mr. *Snape* and others, Therefore I ſhall content myſelf with giving the Reader a ſhort Account of their Uſe. And *Firſt*,

The Uſe of the Kidneys is, to ſeparate the Urine from the Blood, which, by the Motion of the Heart and Arteries, is thruſt into the emulgent Branches, which carry it to the little Glands, by which the Serofity or watery Part being ſeparated, it is received by the Orifices of the little Tubes,

The Uſe of the Kidneys deſcribed.

which go from the ſmall Glands to the *Pelvis* or Baſon in the Middle of the Kidney, and from thence it is that the Urine runs by the *Ureters*, as they are termed, into the Bladdor.

The Blood, which could not enter the Glands, is brought back by the emulgent Veins of the Kidneys.

Urine conſiſts of much Salt floating in Water.

The Urine, thus ſeparated, conſiſts of much Salt floating in Water; and on this Account it is, that the Kidneys have their Situation ſo near the Heart: For had they been placed at a greater Diſtance from it, other Particles muſt have united with the Salts and aqueous or watery Particles, (as in the preſent Situation ſome terreſtrial ones do,) and diſturbed their Secretion. And this Inconvenience is hinder'd, as I ſometime ago remarked, by the Situation of the Kidneys, which are ſo near the Heart, that the Blood, *&c.* moves ſo quick, that ſuch Particles are hinder'd from uniting, or coming within the Sphere of Attraction (as much as poſſible) of the *Urinous Salts.*

The Ureters deſcribed.

The *Ureters* are two long Pipes or Canals which come from the Baſon of the Kidneys, one on each Side. They lie between the Doublings of the *Peritonæum*, and deſcending in the Form of an S, they pierce the Bladder near its Neck, where they run ſome Space between its Coats, and then open into its Cavity.

The Cavity of the Ureters is contracted ſometimes in three or four Places, more eſpecially towards the Bladder; and human, as well as brute Creatures, ſuch as are ſubject to the Gravel, have them very much wider than thoſe who are not ſubject to this Diſorder. Furthermore, I have obſerved, upon the Diſſection of human Bodies of ſuch as were exceſſive Drinkers, that the Ureters have been ſo dilated, as to put the End of one's little Finger into them. And therefore, I think it may truly be ſaid, that ſuch Tipplers make their Bodies into a kind of Cullendars to percolate the Liquor between

between the Hogſhead and the Piſs-pot: Of ſo little Uſe are they to the reſt of Mankind.

The Obſtruction of the Ureters by Gravel, or any other foreign Matter, cauſes a Suppreſſion of Urine oftentimes very fatal; for it lies out of the Reach of manual Operation. Therefore, when the Caſe is thus, moſt or all the Evacuations are requiſite; and *firſt*, Bleeding, altho' the Horſe has not any Fever, beſides a *ſymptomatic* one. For, from Pain his Blood muſt acquire an exalted Motion; I ſay, for this Reaſon, Bleeding ſhould be performed in the Beginning of the Diſeaſe, in order to give more room for the offending Matter to paſs along the Ureters.

I muſt confeſs I have been often perplexed to find out, how or in what Manner it is poſſible for ſuch large Pieces of Stone or Gravel to paſs from the Kidneys along the Ureters to the Bladder, when I have conſidered the Paſſages as they are very narrow, and, in ſeveral Places, much more contracted than in others: But that it is really ſo, is every Day's Experience, and beſt underſtood by thoſe, who are ſo unhappy as to ſuffer under excruciating and intolerable Gravel-Pains; for theſe Unfortunates are truly ſenſible of the Progreſs which any Piece of fabulous Concretion makes from the Kidneys along their Back and Flanks till its Arrival in the Bladder. And then for the moſt part it is, that their violent Strainings to vomit ceaſe, and nothing farther is to be feared, but the Trouble of forcing the Piece of Stone through the *Urethra* by the *Penis* or Yard.

But it often happens, that ſuch large Stones come by the Ureters from the Kidneys, that when they are even got into the Capacity of the Bladder, the Perſon is not able to piſs them away: Which to me is ſurprizing; ſeeing, as I juſt now hinted, the Ureters are ſo narrow, and the Neck of the Bladder ſo large. However, there is no Doubt of it, but the beſt Way to get rid of theſe Stones, when they

are in the Bladder, is to hold the Urine as long as we can with Safety, and then the *Detruſores Urinæ* or Muſcles which drive out the Urine will have more Power to force out the Contents of the Bladder. But when the Stones are of the white Kind or inclinable to a greyiſh Colour, we have Reaſon to fear their becoming ſo large that they cannot paſs the Ureters, *&c.* Therefore, thoſe who are afflicted with the reddiſh Gravel reſembling Brick-Duſt, have leſs to apprehend; for I dare ſay this laſt Kind ſeldom ſticks together in ſuch Quantity as to form a Stone that cannot be piſs'd off by the *Penis*.

Grey or whitiſh Gravel, moſt likely to breed large Stones in the Kidneys, *&c.*

Boerhaave's Opinion of the Gravel, Signs of it in Human Bodies.

It is certain, that the Kidneys in Human Bodies are, in Fits of the Gravel, affected with a true Inflammation. And this the incomparable *Boerhaave* tells us is ſo from the burning, pungent, and great Pain; from the ſmall Quantity of Urine very red and fiery, or in the Height of the Diſtemper watry; from the Numbneſs of the Leg on the pain'd Side, the Pain of the Groin and Teſticle, the *Iliac Paſſion* or Nervous Colick, the vomiting of Bile, and continual Belchings.

All the general Cauſes producing an Inflammation may occaſion the aforeſaid Symptoms, more particularly what hinders the Straining and Paſſage of the Urine in the Urinary Paſſages. And if a great Inflammation ſeizes theſe Veſſels, they are often ſo bound up, that no Urine is made; at other Times but very little, thin, and watry; which no Doubt is a very bad Sign.

The Species and Cauſes of Nephritick or Gravel-Pains are infinite, yet the Cure of all of them is much what the ſame. And *Firſt*,

The Cure.

General Remedies proper for the Cure of Inflammations take Place, *viz. Bleeding*, *Revulſion*, and *Dilution*; and *lenient Decoctions*, *Emollients*, and ſuch Things as reſiſt too much Heat, ſhould be given plentifully.

Clyſters, *Fomentations*, and *Baths* prepared with *Emollients*, are (in Human Bodies) exceeding beneficial;

ficial; but the two First can only be used to Horses.

Secondly, a moist softening Diet or Food is very necessary, such as *scalded Bran*, *boil'd Barley*, and the like; and if the Symptoms of Pain are very violent, *Opiates* are proper; and in Human Bodies, when there is too much Vomiting, I know nothing answer better than warm *Gruel*, the *Wheys* of several Sorts, or such like, sweeten'd with *Virgin Honey*: And it has been observed, that Honey is of so penetrating and healing, or rather absterfive Quality, that it will cure even Ulcers of the Kidneys, by a continued Use of it for some Time.

An Abscess in the Kidney.

If the Distemper cannot be dispersed, but continues beyond the seventh Day, an *Abscess* or Gathering in the Kidney is to be suspected: But if the Suppuration continues long, the whole Kidney forms a Bag fit for no Manner of Use; and then a *Tabes Renalis* or a Consumption of the Kidneys commonly ensues: But if this forms a *Schirrous* or hard knotty Swelling, a Palsy or Lameness of the Leg on the diseased Side follows, which is incurable; from whence a Consumption or Dropsy proceeds.

A Stone in the Kidneys, how form'd.

If a small Quantity of inflammatory coagulated or curdled Matter sticks in the lesser Urinary Passages, it lays a Foundation, to which the Sandy Matter which supplies the Distemper being added, and growing hard, forms a Stone, and so increases it, that it is very difficultly dissolved or brought away by any Medicine.

I have seen Dr. *Boerhaave* lay a small Stone, taken out or a Person's Bladder, in the Ball of his Hand, which, by his pouring a Liquor upon it, dissolved and fell into Pieces very soon. Whereupon this great Luminary in the Art of Physick observ'd, that he was not without Hopes of, some Time or other, meeting with a proper and safe Dissolvent for the Stone in either the Reins or Bladder; but frankly confess'd that the Liquor which dissolved the Stone in his Hand, altho' it did not discolour

the Skin, yet it was not ſafe to give the ſame inwardly. And I myſelf have tried to diſſolve ſmall Pieces of Gravel, by putting them into ſeveral Kinds of Liquors, which ſometimes anſwer'd my Expectation: But then ſuch Liquors that had the greateſt Power of diſſolving the Stones, were not ſafe for inward Uſe. Only this I muſt obſerve, that the *Juice of Onions* approach'd neareſt to the Diſſolvent I was ſeeking after. I obſerve by the Experiments of a late Author, the ingenious Dr. *Hales*, that the Juice of this Vegetable is a very powerful Diſſolvent of calculous Matter; and from this Hint no doubt a great many uſe the Infuſion of Onions in White-Wine, to bring away Gravel, *&c.* lodged in the Urinary Paſſages; though in my Thoughts, when the Matter which compoſes the Stone is of the greyiſh Kind, as I juſt now ſaid, it is very hard to be diſſolved, and when grown to any Bigneſs in the Bladder, it is ſtill of a firmer Conſiſtence, lying in a Kind of *Strata* or Coverings like the Coats of an Onion, as I have often obſerved in thoſe I have taken from both Men and Women, which are for the moſt Part of an oval Shape like the Bladder, which moulds them as they increaſe in Bulk like the rolling of a Snow-Ball.

Juice of Onions a Diſſolvent of calculous Matter. Dr. *Hales*'s Obſervation of it.

I once, in cutting an old Man for the Stone, extracted ſix Stones out of his Bladder, which weigh'd one with another above an Ounce each; they were ſomething bigger than Pidgeon's Eggs, ſmooth, and poliſh'd by rubbing againſt one another like ſo many Bullets in a Bag; and whenſoever I meet with the firſt Stone of a ſmooth Surface, I am in full Expectation of more ſuch like Companions, though the Number cannot, by any Trial, be aſcertain'd, 'till we have extracted all we can lay hold of, and ſounded the Bladder very diligently afterwards.

A particular Caſe.

Horſes are not much troubled with the Gravel, by reaſon their Liquor is moſt ſimple: But, Man, I am ſorry to ſay it, who ſhould be the moſt reaſonable Part of the Creation, is moſt unreaſonable in his

Horſes not ſo ſubject to the Gravel as Men, and why.

his Longings after very different Meats and Drinks, tho' they are ſo prejudicial to his Health and Well-being. And there can be no other Reaſon given why a Man ſhould be afflicted with ſo many out-of-the-way Diſorders unknown to Brutes, but his rioteous and luxurious Living; for, rather than deny himſelf of his Bottle, and the Solace of his Bon-Companions, he will run the Hazard of his Health, and fill his Stomach with Crudities, and his Reins with Tartar, proper Fuel for moſt Fevers, as well as for the two Couſin-Germans the Gravel and the Gout in particular. But, leaſt I write a Treatiſe upon the Diſeaſes of Mankind, inſtead of one upon Horſes, I muſt return to the Text.

I have ſaid in general, that Bleeding and moſt Evacuations are neceſſary in Caſes of Gravel-Pains, as they empty and give more Room for the Enemy to diſlodge; therefore after Bleeding ſufficiently, let the following Clyſter be injected very warm. Bleeding proper.

Take of Mallows, and Marſh-Mallows, of each three Handfuls; Pellitory of the Wall, two Handfuls: Boil theſe in four Quarts of Water to three; then ſtrain out the Liquor ſtrongly, and add of Venice-Turpentine three Ounces, diſſolved in the Yolks of three Eggs; Oil of Juniper, and Oil of Turpentine, of each half an Ounce; Oil of Anniſeed, two Drachms. Incorporate the Oils with the Turpentine, Eggs, and three Ounces of Syrup of Marſh-Mallows; then mix all together for a Clyſter to be given in the ordinary Way. A Clyſter for the Gravel in Horſes.

The Horſe's common Drink ſhould be the *Gum-Arabic-Water* preſcribed in the Chapter upon the Flux or Looſeneſs, and half an Ounce of ſweet *Spirit of Nitre* put into his Morning or Evening Draught for three or four Days; and if this Method with moderate Exerciſe will not perform a Cure, the Caſe is very deſperate, and the Horſe not worth keeping.

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A Horſe ſhould ſtop now and then upon the Road, and why.

I have known ſome Horſes very ſubject to an *Iſchury* or Suppreſſion of Urine, from riding hard without letting them ſtop now and then to ſtale. For when the Bladder is ſtretch'd beyond its natural Tone, the *Detruſores Urinæ* are diſtended to ſuch a Degree as to loſe their Power of Elaſticity, and the poor Creature is very hard ſet to drive his Water from him. Therefore it may be judged how neceſſary it is to ſuffer a Horſe to ſtop a little now and then upon the Road, to try if he'll piſs, for Fear of ſuch Accidents.

When a Suppreſſion of Urine happens to a Man or Woman, we can give immediate Relief by taking off the Water with an Inſtrument call'd a *Catheter*. And I have performed this Operation once or twice a Day for a Fortnight upon the ſame Perſon, before the Bladder has recovered its due Tone.

The Author's new Operation for Suppreſſion of Urine.

Three or four Times I have in my Practice (when the Sphincter Muſcle or Neck of the Bladder has been ſo ſwell'd that it would not admit of paſſing the Inſtrument,) cut into the very Body of the Bladder above the *Os Pubis*, and let the Urine flow out that Way for a Month or ſix Weeks, 'till ſuch Time as the Inflammation, *&c.* about the Neck of the Bladder was quite diſperſed and gone; after which the People piſs'd as well and ſound as ever, and ſome of them are yet living; tho' it is ten Years ſince I performed ſuch Operation upon them.

I mention this Operation as it is a Method never before practiſed, nor even mentioned in any ancient or modern Author; and really if the People I did it upon had died under my Hands, I might perhaps have been proſecuted by ſome malicious ill-deſigning People for Male-Practice; but as they all recover'd I am out of Danger; and I would not give a Farthing for one of our Profeſſion, who will not in deſperate Caſes, and where nothing can be expected but Death without ſome extraordinary Methods be uſed, move out of the common Pack-Horſe Road to ſave a Man's Life: And I am fully perſuaded, that a grea

a great many People die of a Suppreſſion of Urine, altho' they might be cured by the aforeſaid Method: But the Generality of Mankind are ſo ignorant, that when a Man dies for want of making Water, it is preſently concluded, that the Gravel or Stone was the Cauſe; whereas they have no manner of Relation to an *Iſchury* or Stoppage of Urine. I could eaſily account for the Reaſonableneſs of my Operation for this Diſorder, and ſhow how impoſſible it would be for the Patient to piſs under ſuch a Paralytick Indiſpoſition of the Bladder, as happens at ſuch Times, if my Leiſure would in any kind permit me ſo to do: But if any of my Readers ſhould (though I heartily wiſh they never may) be troubled with a Suppreſſion of Urine for ſeveral Days, and that, after the taking their Water away by the Uſe of the *Catheter*, the Bladder ſtill continues inſenſible of the Preſſure of Urine with which it is from Time to Time fill'd: I ſay, when the Caſe is thus deſperate, I am ſure Cutting into the Bladder above the *Os Pubis* muſt be the only Relief, and it is both ſafe and ſucceſsful; neither is it attended with Pain, no not even ſo much as that of being let Blood: For, as the Bladder is, or ought to be, pretty full of Water when this Operation is perform'd, the Parts are ſo upon the Stretch and benumb'd, that there is little Feeling left. Beſides this, there is not any Loſs of Blood, no not the Quantity of two Ounces, eſpecially if the Operation is perform'd by a Perſon ſkill'd in Anatomy; nor are the Parts which miniſter to Generation in the leaſt hurt or diſabled, as I have been informed from ſeveral of my Patients who have undergone this new Operation. But to return.

It is ſcarce worth any Body's while to keep a Horſe which is ſubject to Diſorders of the Reins and Bladder. I ſhall therefore only add a *Recipe* or two for piſſing of Blood, after I have given a ſhort Account of the Cauſe; for,

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As to the Signs, every Body's Eyes will beſt inform them, tho' they will be hard put to it to know where the Grievance is ſituate; for there is often bloody Urine made by too violent Exerciſe without any Fault of the Kidneys, or Suſpicion of the Stone, tho' the Blood which comes away in the Urine is frequently diſcharged from one or both of them. And ſometimes Blood is diſcharged from the Ureters, and ſometimes from the Arteries of the Yard. A Fall or Bruiſe, as well as a Straining or hard Leap, as the Huntſmen term it, will alſo occaſion Piſſing of Blood.

De Grey relates a Story "of a good Gelding "with which a young Gentleman was Hunting; "that upon coming to a great Leap, and rid off his "Wind, his Rider inconſiderately forced him to "take it, which the Gelding did, tho' with much "Difficulty, but withal fell and was not able to "riſe up but with the Help of Men: And upon "coming Home the ſame Night he piſs'd Blood, "whereof he died four Days after, maugre the "Endeavours of three able Farriers; and being "opened, they found two Veins broken near his "Kidneys, and much black Blood."

The ſame Author alſo takes Notice, that piſſing bloody Water often is occaſion'd by too hard Riding, *&c.*

The Cure. In Bloody Urine, or piſſing of Blood, the Intention is to blunt the Acrimony or Sharpneſs of the Humours as much as poſſible. Therefore Milk given with *Bole Armoniac* is proper.

A Mixture for piſſing of Blood. *Take two Quarts of Milk; two Ounces of Armenian Bole in Powder; and half an Ounce of Japan Earth.* Mix and give it the Horſe all at once.

Doctor *Mayern* tells us, "that he ſaw a Perſon "(who diſcharged ſuch large Quantities of Blood in "his Urine, that he was in a Conſumptive Way,) "cured by drinking new Milk from the Cow every "Morning

' Morning; and the Way was to milk it upon a ' Sprig of red Mint, and whilſt it was yet hot, ' ſweeten'd with Syrup of Quinces and a little ' Powder of Cinnamon; and that he recover'd and ' lived many Years afterwards."

Sheep's Milk preferable to Cow's Milk.

Moſt Authors, *viz. Foreſtus*, *Hollerius*, *Duretus*, as well as *Hippocrates*, and *Avicenna*, are very liberal in the Praiſe of Sheep's Milk and *Bole Armoniac*, Therefore where ſuch Milk can be had it may be uſed inſtead of Cow's Milk.

Hog's Dung eſteem'd good againſt Bloody Water.

Laſtly, Hog's Dung put in Milk and ſtrain'd is a certain Remedy, among the Country People, for their Cattle which piſs Blood, or have the Mooring, as they call it: But this I put down by the Way, not having any other Authority for it than what I might hear from People who uſed to buy great Numbers of Oxen, *&c.* to drive into the South; and as piſſing of Blood is a very common Diſtemper amongſt ſuch Cattle. I believe this is the Remedy the Drovers have yet diſcover'd.

CHAP. XXX.

Of the Colt-Evil, and Mattering of the Yard.

THE *Colt-Evil* is ſuppoſed to ariſe from Stoned Colts having their full Liberty with Mares, before they are able to cover them; but I obſerve moſt Farriers are ſo ignorant, that they bring under this Denomination all Diſeaſes of the Sheath, tho' they only proceed from Dirt and Naſtineſs lodg'd there, which a little warm Beer and Butter ſkilfully uſed will remove, and cauſe the Swelling to diſperſe, as has been often experienced.

The Cure.

When a Colt's Yard is tumified or ſwell'd, from whatever Cauſe it proceeds, it ſhould be fomented with warm Flannels ſqueezed out of the following Fomentation as warm as he can well bear it; and

if

if he will not be eaſy while it is uſing bind him in ſome ſafe Manner.

Fomentation for the Colt-Evil.

Take the Leaves of Mallows, and Marſh-Mallows, Flowers of Camomile, Melilot, and Fumitory of each three Handfuls; Roſemary, Origanum, or wild Thyme, Southernwood, and Flowers of Elder of each two Handfuls; Juniper, and Laurel Berries bruiſed, of each four Ounces. Boil theſe in eight Quarts of Water to ſix. Then ſtrain out the Liquor and with two Pieces of Flannel by Turns foment the Parts affected as warm as the Horſe will bear it, for ſome Time, Morning and Evening: But before you apply it, it may not be improper to add to it ſome common Malt or Moloſſes Spirit, about a Pint will be ſufficient; and every Time when uſed, it ſhould be kept warm over a Chafing-Diſh of Coals, or it will grow colder than it ſhould be.

When you have done fomenting the ſwell'd Part, the Liquor may be put upon the Herbs, *&c.* to keep for Uſe againſt next Day. This Fomentation may be uſed as a general one in all Kinds of Swellings of the Fleſhy Parts, only by adding more Spirits to make it penetrate deeper.

Mattering of the Yard, or *Gonorrhœa Simplex* in Horſes, how cured.

Mattering of the Yard, as it is call'd, in Stoned Horſes is often no other than a *Gonorrhœa Simplex* in the ſtricteſt Senſe of the Word: For, when theſe Creatures are high fed, and do little, nothing is more common than to ſee them ſhed their Seed by thruſting their Yard againſt their own Belly; and if this is the Caſe, and you want a Cure, you muſt cut off his Stones, or elſe let him have Mares; for either of theſe will do it effectually.

If the Skin is fretted off a Horſe's Yard by being over eager in covering Mares, it muſt be cured with the ſame Kind of Applications as Wounds in any moiſt Part of the Body, and when ſuch Wounds have not been of too long ſtanding, the following Ointment, or rather Liniment, is proper.

Take

'*Take the Yolk of two Eggs, and mix with them* A Liniment for a Horſe's Yard when ſore.
Venice Turpentine two Ounces, and of Honey of ſes one Ounce; ſtir all well together, and apply moderately warm twice or thrice a Day with a all Bunch of Feathers tied together. And if this performed for ſome Time, and the Yard now and en waſh'd with warm Water to keep it clean, I re ſay it will cure any Sore or Wound upon the utſide of it: But as this Part of the Body is of a t ſpungy Nature, and is often extended and con-acted, it requires ſome Time to heal Wounds upon For, as I have often ſaid before, *Motion hinders rition* in theſe Caſes, as may be found by Experi-ce when we get a Hurt upon a Joint, or have a *n* in the *Lip*, as the North-Country Phraſe is; , theſe Parts being of Neceſſity often obliged to otion, they will not give Time for the Wound to nſolidate or heal. If the Sore ſeem to put out ngous or ſpungy Fleſh, it ſhould be waſhed now To conſume or eat away fungous Fleſh. d then with a little *Roman Vitriol Water*, which y be prepared with half an Ounce of *Vitriol* to a art of *Lime Water*, and kept in a Bottle for Uſe. Sometimes there ſeems to be no more than a ſim-Inflammation from the Horſe's being too eager covering Mares; and if ſo it is proper to bathe Yard with the following Mixture.

'*Take Lime-Water, one Quart*; *Sugar of Lead,* A Water for a Horſe's Yard, when inflamed. *f an Ounce*: Mix and apply it Milk-warm, by ſhing the Part with a ſoft Rag or Piece of Spunge 'd in the Liquor.

As to a Horſe's being burnt by a Mare, as the rriers call it, I do not ſay it is impoſſible, altho' elieve it is not very probable; for they cannot an any Thing elſe by ſuch Term than that ſuch rſe is clap'd, or has got the *Chaude-Piſs* or hot

Now there is no manner of Doubt to be made that ſuch Diſtemper proceeds from over-heating the

the Genital Parts of Animals by frequent Friction or rubbing upon one another, in like Manner you may cauſe Fire even by rubbing two dry Sticks together; for Fire is cauſed by rapid Motion, as may be ſeen from ſeveral Experiments, beſides that of Flint and Steel. Therefore, if the Genital Parts of Male or Female happen to be too much exerciſed in the Act of Coition or Coupling together, they may either of them have the Skin rubbed off the Part, and Ulcers form'd, either on the Outſide, or in the *Urethra*: Add to this, the Corruption of the *Semen* or Seed of ſeveral Male Animals when they mix or Couple with one of the Female of the ſame Species; for, this, along with the Juices which naturally ouze out of the Glands to moiſten the *Vagina* or Sheath of the Female, acquires in the End ſuch a corroſive Quality, that being imbibed or ſuck'd in by the Yard of the Male Animal, which may well be compared to a Piece of Spunge; I ſay, this fermented corroſive Liquor when it enters the Yard either by the Pores upon the Outſide of it or by the *Urethra* or Piſs-Paſſage cauſes what is commonly tho' erroneouſly call'd *Gonorrhœa*. And if this be the Caſe, as undoubtedly it is, how much miſtaken muſt that ingenious Man the late Dr. *Friend* have been, when he endeavours to make the *French-Pox* a new Diſtemper and that the *Lepra Græcorum* and *Lepra Arabum* had not any Relation to it.

Cauſe of a Gonorrhœa.

In my Opinion, the Ancients only wanted a proper Name for this Diſtemper; and there can be no Doubt, but if ſeveral Men uſe the Act of Coition with one and the ſame Woman, there is great Likelihood, that the thin Skin or Lining of the *Vagina* of the Woman may be fretted off in ſome Part or other, or at leaſt the Parts of Generation will be ſo heated and inflamed, as that they will eaſily ſuppurate or diſcharge from the Glands call'd *Lacunæ* a corroſive *Ichor* or Ferment, which when mixed with the corrupted Seed, lodged as aforeſaid in the *Va-*

gina

ina or Sheath of the Female, conſtitutes ſufficient latter to propagate the Diſtemper to the next omer, and ſo on *ad infinitum*, unleſs ſuch Ulcers r running Sores be ſafely and thoroughly deterged r cleanſed and heal'd, otherwiſe they will be re-ifected.

From what has been ſaid, it appears moſt reaſon- Female firſt
ble that the Female was firſt infected with what we infected with
ow call the *Venereal Lues*, and that the Male, the Venereal
ter the Running commenced, (tho' I think not Lues.
efore,) might propagate it at Pleaſure. And it is ith good Reaſon judged, that tho' one Man (as thoſe Times when Polygamy was no Sin) ſhould ave a Number of Wives, yet ſhall he be ſafe and cure from the Venereal Diſeaſe, provided ſuch ives do not contract the Diſtemper from another uarter. And this may be plainly ſeen in ſtoned orſes, which have a Number of Mares, perhaps or ſeven Score in a Seaſon, yet ſhall they not ave any Running at the Yard which can be judged rulent. But it is far otherwiſe with Dogs, *&c.* Dog's often
hich copulate ſo promiſcuouſly, that they heat the clapp'd.
tches, and thereby get the Clap, which often rns to an inveterate Mangyneſs, accordingly as it ews itſelf in a kind of Leproſy in Human Bodies, hen the *Venereal Miaſmata* or infectious Matter s once got into the Blood.

Dogs moſtly lick themſelves whole, tho' their ine, (for the Diſtemper makes them piſs oftener n they would do, and that is almoſt as often as y pleaſe ;) I ſay their Urine waſhes the ſmall cers within the *Urethra*, and keeps them clean, hat no Eſchars or hard Scabs can be form'd upon m to hinder the Diſcharge of the Venereal nom ; for, in Fact, theſe Eſchars or Scabs, whe-r by Neglect or bad Management, occaſion the in Human Bodies by driving back the Venereal nt, ſo that it ſoon infects the whole Maſs of od, and deſtroys the ſoft ſpungy Bones, *&c.* , but in Proceſs of Time ruins the whole Hu-

man

man Fabrick. Yet more Stir and Noiſe is m
about the Danger and Cure of the Venereal
eaſe, than needs be by far; for, in Reality, ther
no more in curing it (if not of too long ſtandi
than in drawing Teeth, or cutting out Corns,
this with the greateſt Safety imaginable, even w
out taking a Grain of any Medicine by the Mou
Yet I am told, that this Diſeaſe is ſo terrible
frightful to the *London* Apprentices, *&c.* tha
great many of our Profeſſion live very comforta
from their Gains upon this one Article.

Yet I muſt confeſs theſe Gentlemen are at m
Pains and Trouble to find out new and frigh
Symptoms in this Diſtemper, than one need b
curing it. However, if their frightful declamat
Way of Writing has any good Effect upon Yo
ſo as to make them lead better and more virtu
Lives, it would be Pity for any one to inve
againſt them. Therefore, at preſent I muſt d
from the Subject, and proceed to a Deſcriptio
the Dropſy in Horſes.

CHAP. XXXI.

Of the Dropſy in Horſes.

MR. *Gibſon* ſays, that all our *Engliſh* Auth
and ſome *Italians*, have enumerate
Dropſy among the Diſeaſes of Horſes; but I find
Gibſon has not thought Sir *William Hyde*'s Book
third Edition of which was printed in 1717, wo
his Peruſal: For this Author never mentions
Dropſy as a Diſeaſe incident to Horſes, altho
hits a good Number of the Diſtempers which af
this uſeful Animal. But then Sir *William* preſcr
ſuch out-of-the-way Mixtures and Applicati
that to read them is enough to make one ſick.
that in the main I have not read any Author u
the Subject of Horſes (beſides Mr. *Gibſon*) whic

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worth a Farthing; I mean as to the *Methodus prescribendi* or Manner of prescribing Medicines. I own several of them, as the late Duke of *Newcastle*, Sir *William Hope*, and others, have treated handsomely with relation to the *Menage*, as the *French* call it, of this Creature; but then give me Leave to say, they were not competent Judges of the Force and Operation of Medicine. Therefore, when we peruse either the Works of the Ancients or *premier* Moderns upon the Subject of *Farriery*, we should do it with a View to gain something from their Practice and Observation upon the Symptoms or Tokens of Distempers; for as to the curative Indications, I am sure they are in a great measure very lame and defective.

The ancient Farriers and *premier* Moderns censured.

I cannot give a better Definition of a Dropsy than that which I was long ago taught by my much respected Preceptor Dr. *Boerhaave*; and tho' this Definition seems chiefly calculated (by that great Luminary in Physick) for human Bodies; yet I am satisfied it will hold good with relation to Horses, whose Arteries, Veins, Lympheducts, *&c.* are conical as ours; and Matter must be indued with like Properties, whether it be found in the Shape of a Man or a brute Creature.

Dr. *Boerhaave*'s Definition of an *Anasarca* or Dropsy when the whole Habit of the Body is stuff'd with pituitous or phlegmy Humours, is as follows:

Dr. *Boerhaave*'s Definition of an Anasarca.

" As often as in the whole Habit of the subcu-
" taneous Fat the *Lympha* stagnates, or is let out
" of the Vessels, it forms a Dropsy; and the Signs
" of it are, a soft, loose Tumour of the whole Body,
" really œdematous (or cold and watry) in the
" Legs, especially, a Desire of Drinking, the Urine
" thin, white, *&c.*

As the Dropsy of the whole Body is by the *Greeks* stiled *Leucophlegmatia*, and because it proceeds from a Kind of *Lymph* or Water, it may not be thought improper for my present Purpose to give the Reader a general Notion of what we mean by those

thoſe Veſſels of the Body, which we call *Lymphatics.*

Lymphatic Veſſels, what.

Theſe are ſlender, pellucid or tranſparent Tubes whoſe Cavities are contracted at ſmall and unequal Diſtances, by two oppoſite ſemilunar Valves, which permit a thin and tranſparent Liquor to paſs thro' them towards the Heart, but which ſhut like Floodgates upon its returning.

They ariſe in all Parts of the Body, but after what Manner needs no great Diſpute; for without Doubt all the Liquors in the Body (excepting the Chyle before deſcribed) are ſeparted from the Blood, in the fine capillary or Hair-like Veſſels, by a different Pipe from the common Channel in which the Reſt of the Blood moves: But whether this Duct or Pipe be long or ſhort, viſible or inviſible, it is ſtill a Gland, while it ſuffers ſome Part of the Blood to paſs thro' it, and denies a Paſſage to other Parts of that Fluid. Now, the Glands, which ſeparate the *Lympha* muſt be of the ſmalleſt Kind, being inviſible thro' the fineſt Microſcope that has yet been contrived; but their excretory Ducts or diſcharging Orifices, the lymphatic Veſſels, unite with one another, and grow larger as they approach the Heart; yet they do not open into one common Channel as the Veins do; for ſometimes we find two or three, nay ſometimes more Lymphatics, running by one another, which only communicate by ſhort intermediate Ducts, and which unite, and preſently divide again.

In their Progreſs they always touch at one or two conglobate or veſicular Glands, into which they diſcharge themſelves of their *Lympha* or watry Humour; which Liquor, if chymically examined, will be found to contain a great deal of volatile but no fixed Salt, ſome Phlegm, ſome Sulphur, and a little Earth.

The Uſe of the Lymph may be gathered from the Conſideration of the Parts into which it diſcharges itſelf, which are the *Receptaculum Chyli* in the

the *Abdomen* or lower Belly, and the *Ductus Thoracicus*, *Jugular*, and *Subclavian Veins*, which shews very plainly, that its Use is to dilute and make perfect the *Chyle* before it mixes with the Blood.

Now the whole Lymph, which is separated from the Blood, being requisite for this Use, it is plain, that there could be no Glands in the *Abdomen* or lower Belly appropriated for the Separation of the whole Lymph, but what must have had a very great Share of the Blood, which passes through the *Aorta* or large Artery arising out of the Heart, in order to separate so great a Quantity of this watry Liquor. But the Liver and Kidneys requiring likewise a great Quantity of Blood, and which for many Reasons could not be avoided, provident Nature chose to separate the Lymph from the Blood which goes to all Parts of the Body, rather than appoint particular Glands for such Use in the *Abdomen* or lower Belly, which might have been more at hand, but would have robb'd the other Parts, to wit, the Liver, Kidneys, &c. of a large Quantity of Blood, and also occasioned a very unequal Distribution of it. Now to return to the Dropsy, mostly proceeding from this Lymph when extravasated or out of the Vessels.

As the Dropsy proceeds from a kind of Weakness in the Blood, the curative Indications are only two, *viz.* a Discharge of the Water, and Recovery of the Strength of the Blood. And to this End it is of the greatest Consequence, both in human and brute Creatures, to know whether the Sick of the Dropsy be easily or with Difficulty purged; for, as I have often mentioned before, and I think hereafter cannot too often inculcate, the *Idiosyncrasy* or particular Temperament and Disposition of Bodies must first be learnt, otherwise the Prescriber will make but blundering Work on't. The Cure.

Take of black Hellebore fresh gathered, two Pounds; wash, bruise, and boil it in six Quarts of Spring or The Hellebore Infusion for the Dropsy.

River-Water to four Quarts; then ſtrain out the Liquor, and put two Quarts of white Wine upon the remaining Hellebore, and let it infuſe warm in a Pitcher or the like for forty eight Hours, often ſhaking the Liquor about; then ſtrain out the Wine, and mix both the Water and it together, which may lie kept in a Stone-Bottle for Uſe. Give the Horſe a Pint Morn and Even, Milk-warm, while it laſts.

Strong Cathartics, or purging Medicines which work quick, are to be preferred to thoſe which work milder and ſlower, and theſe are to be repeated as often as the Strength of the Horſe will permit.

Reſinous Purges good in the Dropſy in Men, but not in Horſes.

In human Bodies, where the alimentary Tube or Pipe from the Stomach to the Fundament is not ſo long by ſeveral Yards as in Horſes, nor the Poſture ſo inconvenient, reſinous Purges are moſt effectual; ſuch as Gamboge, Elaterium or the inſpiſſated Juice of wild Cucumber, and the like, by reaſon they powerfully irritate the Glands of the Guts, and make them ſqueeze out their Contents, inſomuch that the Patient ſhall have ſeveral Stools moſtly Water, tho' he drink very little Gruel, during the Operation of theſe Kind of Purges; and therefore in human Bodies they are very ſerviceable to drain off the ſuperfluous Lymph: But I fear ſuch Things are not ſafe for Horſes, for Reaſons already aſſign'd under the general Chapter upon Purging, *&c.* Therefore, if the Legs of your Horſe pit, upon the Impreſſion of the Fingers, I mean, if they do ſo pretty high up towards the Hough behind, or Knee before, in ſuch Caſe his Blood may be judged too weak, that is, its *Momentum* or Stroke againſt the Extremity of the Veſſels, for want of Spirits, *&c.* is not ſo ſtrong as it ought. And therefore, upon its perpendicular Preſſure the Parts are apt to tumefy and ſwell, more eſpecially in the lower Limbs of human, and below the Houghs and Knees of brute Creatures.

When

When the Waters are lodged in the Abdomen, or between the inner Rim of the Belly and Guts, then the Diſtemper is called a *Tympany*, becauſe the Belly in ſuch Caſes ſounds like a Drum. The Tympany, what.

It is alſo termed *Aſcites* by the *Latins*; and *Celſus*, the famous Phyſician in the Time of *Tiberius* the third *Roman* Emperor, tells us, the only Difference between *Tympanites* and *Aſcites* is, that the *firſt* conſiſts more of *Humours* and leſs *Spirits*, the *latter* of more *Spirits* and fewer *Humours*; which Diſtinction is pretty nice and worth Obſervance, tho' I don't remember any other Author to have made ſo accurate a Remark; for if it be really as *Celſus* informs us, it is very likely that the *Aſcites* or Dropſy of the Abdomen, which conſiſts of more Spirits and leſs watry Humours, may be better cured by proper Medicines, than by the Operation of *Tapping*, by reaſon the ſick Creature would better undergo the Loſs of a watry than ſpirituous Liquor. Aſcites.

It is not always to be ſuppoſed, that a Horſe has got the Dropſy when he ſeems to have a Kind of cold Swelling upon his Legs, that takes an Impreſſion from the Fingers; no, this often happens for want of due Exerciſe, Dreſſing, *&c.* becauſe, as the Limbs are the moſt depending Part of the Body, the Blood moves in them with Difficulty, that is, it preſſes hardeſt againſt the Sides, *&c.* of the Veſſels by the Force of its perpendicular Altitude; for, *all Fluids preſs according to their perpendicular Altitude, and not according to their Quantity.* Therefore, I ſay in the Limbs, notwithſtanding Nature has very wonderfully contrived what we call *Valves*, in order to take off or eaſe the Sides of the Veſſels from the perpendicular Preſſure of the Blood; yet ſuch Preſſure muſt be greater there than in thoſe Veſſels which lie more horizontal. And this Piece of Mechaniſm may be plainly obſerved by any one of the meaneſt Capacity, who will be at the leaſt Trouble imaginable to think: For, in thoſe Tubes into which *Mercury* or *Quickſilver* is put in order to Every Swelling in the Legs not a Dropſy. All Fluids preſs according to their perpendicular Altitude.

shew the lesser Variations of the Air, *viz.* the Diagonal ones, the Quicksilver will rise and fall (if I may so say) several Inches more than in the common perpendicular Sort. And the nearer the Line struck from the Perpendicular, approaches to a right Angle, by so much the more will the Mercury shew the elastick Force of the Air. And for the same Reason those People who happen to have swell'd Legs in an Evening, find them mostly fallen in a Morning, unless the Force of the Heart be very weak indeed.

The Reason why People's Legs swell in the Day, and fall in the Night.

An Ascites or Dropsy, the Manner how perform'd.

There are very different Opinions about the Manner how a Dropsy of the Belly is produced. Some imagine it proceeds from the Liver which is covered by a thin Membrane, and that when this Membrane happens to be separated by a watrish Humour issuing out of the Capillary Lymphatics, *Pustules* or little Bladders are form'd, which contain a clear watrish Lymph; and if these break, the Water falls into the Cavity of the Belly, and causes the same to swell like a Drum. Others, and particularly our Countryman Dr. *Willis*, think the Dropsy of the Belly proceeds from a Rupture of the Lacteal or Milky Vessels spread about in the Mesentery or Net of Animals. But I am rather inclined to believe, that as there are a Number of Lymphatic Vessels which pour out a watry Liquor upon the Chyle as it passes along the middle Coat of the Mesentery or Net, the Lymphatics are broke, and ouze out Water into the Cavity of the Belly, insomuch that the Guts swim in it as in a Pail full of Water. But what those Passages are by which the Waters are discharged out of the Cavity of the *Abdomen* or lower Belly into the Intestines, *&c.* is yet very uncertain: But it appears by Experience, that an Infusion of *Crocus Metallorum*, or what is called *Vinum Benedictum*, powerfully forces off watery Humours from the Outside of the Guts in an *Ascites* both upwards and downwards, and, as if the Obstacles were removed, it runs plentifully off by Stool.

Stool. And the famous *Sydenham* obſerves, that the *inner Bark* of *Elder*, three Handfuls boil'd in *Milk* and *Water* of each a Quart to the Conſumption of three Pints, is as effectual as any Thing for the Cure of an *Aſcites* or Dropſy of the Belly, if the Patient takes half a Pint in the Evening and the Reſt in the Morning; but then this *diligent Obſerver*, agreeable to Capt. *Burdon* in his *Gentleman's Pocket-Farrier*, orders ſuch Decoction of *Elder Bark* to be repeated 'till the Patient is well; ſo I muſt own the Captain had a good Precedent for his Expreſſion.

And here I muſt not omit the Mention of Dr. *Sydenham's* Honeſty and Candour, where ſpeaking of a Dropſy of the Belly which he had cured, he has Words to the Effect following.

Dr. *Sydenham's* ſincere and honeſt Declaration.

" And I, with the juvenile Confidence of an un-
" experienced Man, verily believed that I had got a
" Medicine that would cure any manner of Dropſy;
" but I found my Miſtake within a few Weeks:
" For, ſoon after I was called to another Woman
" that had the ſame Diſeaſe, which came upon a
" long Quartern Ague; I gave the ſame Medicine,
" and repeated it often, increaſing the Doſe gra-
" dually; but having vainly endeavoured to eva-
" cuate the Waters, the Purge not working, the
" Tumour of the Belly increaſed, and the ſick Perſon
" diſmiſs'd me, and, as I remember, *recover'd*
" *by the Aſſiſtance of another Phyſician, who pre-*
" *ſcribed more effectual Remedies.*"

Now what can be more ingenuous and ſincere than this Confeſſion of Dr. *Sydenham*, who was certainly a Man allowed by the ableſt Judges very capable of the Practice of Phyſick: But ſo far from following this glorious Example are many of your preſent Theoretical Gentlemen, who, juſt diſpatch'd from Colleges brim-full of Diploma and Ignorance, foiſt their Nonſenſe and Abſurdities upon the Publick, yet never own their Errors, but impudently and poſitively inſiſt upon the Juſtneſs of their juvenile and ſhallow Prognoſticks in the Cure of Diſ-

The Folly of truſting to the Judgment of young Phyſicians.

eaſe, inſomuch that an old experienced Practitioner has but a poor Chance of being heard, unleſs the Audience happen to be better Judges than are commonly met with on ſuch Occaſions. But to return.

Three Ways of a Dropſy's being produced.

I am fully perſuaded that a Dropſy in general is produced by any Cauſe, which may, *Firſt*, ſo conſtrain the Serous or watery Liquor as to make it ſtagnate or ſtop in the Veſſels; or *Secondly*, break the Veſſels, ſo as to let ſuch Liquor out amongſt the Membranes of the Body; or *Thirdly*, ſo obſtruct the Veſſels that bring it back from the Cavity of the *Abdomen* that ſuch Liquid cannot exhale, nor be abſorb'd again. And theſe Cauſes are various; ſometimes acute Diſeaſes, ſuch as Fevers and the like; Schirrous Tumours or hard knotty Swellings of any remarkable Bowel, ſuch as the Liver, Spleen, *&c.* all extravagant Diſcharges whatſoever, eſpecially great Loſſes of Blood.

I ſhall now ſet down a Preſcription or two for the Dropſy in Horſes, and juſt mention a particular Caſe; after which I ſhall proceed to an Account of what is meant by a Horſe's being Hide-bound. And,

The Cure of an *Anaſarca*.

Firſt, if the Dropſical Humour be contained within the Bounds of Circulation; tho' indeed there do not want Argument, to prove, that the Waters contain'd in the *Abdomen* or lower Belly of Dropſical Perſons are ſo; I ſay, if theſe Humours are lodged all over, or, as we expreſs it, in the Habit of the Body, it is term'd an *Anaſarca*, and may eaſily be cured (provided the *Viſcera* be ſound) with Purging, and corroborating or ſtrengthening Medicines. And firſt of all give the Horſe this Purge.

A Purge for the Dropſy.

Take Aloes, one Ounce; Gamboge, one Drachm; Saffron in Powder, two Drachms; Cloves, and Nutmegs, each one Drachm; Oil of Anniſeed, ſixty Drops; Syrup of Buckthorn, as much as is ſufficient to make it into a Ball; which may be given in the uſual Way. Only when a Horſe is ſubject to Dropſical

ſical Humours, he ſhould not be allow'd much Water while his Phyſick works, and then it will fetch off more Water.

This Kind of Purge may be prepared at once, if the Perſon who wants it keeps the *Cordial Ball*; for it is only working or beating up the *Aloes* and *Gamboge* when in Powder, into two Ounces of that Ball; and a little *Syrup of Buckthorn*, if the ſame be too hard, will make it of a proper Conſiſtence.

Gamboge ſhould be finely powder'd, and why.

The *Gamboge* ſhould be powder'd in a Mortar that is firſt rubb'd with a little fine *Oil*, otherwiſe its Parts will not be ſufficiently divided; and if it be not, it will cauſe intolerable griping Pains, by ſticking amongſt the Folds of the Guts.

I have ſaid, that *reſinous Purges*, are not convenient nor proper for Horſes,. but that juſt now ſet down is ſufficiently qualified with warm Ingredients which will forward its Operation with Safety. Therefore, when I ſpoke of the Danger of reſinous Purges, I would be underſtood that ſuch Things are ſo, unleſs duly qualified by other warm Ingredients.

Secondly, Corroborating or ſtrengthening Medicines are indicated, which brace the Fibres of the Stomach, as well as thoſe of the whole Body. And for this End I adviſe the following Infuſion to be given every Morning, a Pint for a Fortnight, letting the Horſe be kept without Food for two Hours after it.

An Infuſion to corroborate and ſtrengthen the Stomach.

Take Gentian Root, and Zedoary, of each two Ounces; Camomile Flowers, and Tops of Centaury the leſſer, of each two Handfuls; Bark of Peru, commonly called Jeſuit's Bark, groſsly powder'd, two Ounces; Turmerick, three Ounces; Filings of Iron, half a Pound; Annis or Caraway Seed, four Ounces. Mix theſe together, and infuſe them in three Gallons of Ale for a Week, ſhaking the Veſſel now and then to draw out the Virtues of the Ingredients.

Give the Horſe a Pint of this Infuſion at a Time Morn and Even, and in a little Time the *Craſis* or due Mixture and Quality of the Blood will be reſtored, and the Horſe again to his Appetite, *&c.*

A particular Caſe of a Dropſy cur'd by Accident.

The Caſe I propoſed to mention was this. A very worthy Gentleman of my Acquaintance, who loves a good Horſe and Hunting, had one of his Hunters under the Farrier's Care for ſome Diſorder or other, which I do not now particularly remember, but the Fellow was doing ſomething about his Belly, or Inſide of his Thigh, with a Knife, which either ſlipp'd, or upon ſtarting ran into the Belly of the Horſe, upon which there iſſued out a conſiderable Quantity of Water, and the Orifice or Hole keeping open for ſome Time, I was inform'd there might be at leaſt ſix or ſeven Gallons of Water diſcharged in the Whole, before the Wound cloſed up: But what is moſt remarkable, the Horſe was not before this Accident ſuppoſed any Way inclinable to a Dropſy, nor did he in the leaſt ſhew any Symptoms that Water might be lodged between the Guts and inner Rim of his Belly; for he did his Buſineſs as well as could be expected at his Age, which was pretty conſiderable: But his hinder Legs, which were moſt commonly ſwell'd or ſubject to *Gourdineſs*, as the Dealers term it, fell to their proper Size and Dimenſion. And my Friend told me, that the Gelding was ſo well after this lucky Accident as he call'd it, that he hoped he might ſerve him to ride a Hunting for ſome Seaſons.

Horſes much eaſier cured by Tapping than Men.

Now where the Waters are contained in the Belly, I believe Horſes may be cured by Tapping much ſafer than Men, by reaſon that the Situation a Horſe is in, favours the Diſcharge of the watry Humours thro' the Orifice made by the Inſtrument. And I could Inſtance many Caſes where the Operation has ſucceeded ſo far both on Men and Women, that the Belly, after taking out ſixteen, eighteen, nay ſometimes twenty Gallons of Water at different Times, has kept down to its natural Size,

Size, and the Parties recovered to a Miracle. But the Reaſon why this Operation does not much oftener ſucceed to the Patient's Satisfaction, is Want of Judgment in the Phyſician or Surgeon employ'd: For if theſe underſtood their Buſineſs, they muſt know the different Kinds of tumefied Bellies, and eaſily judge by the Date of the Diſtemper, the Sound of the Belly, and the Fluctuation of the Waters, together with the Aſpect of the Patient, and Knowledge of his or her Manner of living; I ſay, if theſe be conſidered by a ſkilful Perſon of the Profeſſion, a pretty ſure Prognoſtick may be form'd, whether any thing or nothing can be done for the Benefit of the Sick, more than prolonging Life for a few uneaſy Days and Weeks.

Tapping for a Dropſy in Men, why it does not oftner ſucceed.

Laſtly, when the Dropſy call'd *Aſcites* happens to attack a hard Drinker of Spirituous Liquors, I muſt tell him for his Comfort, he cannot be long an Inhabitant of this World, but that his inward Parts are or ſoon will be ſo vitiated, and as it were par-boil'd, that they admit of no Human Aſſiſtance. Therefore he muſt fall, as the merry Drinking Catch expreſſes it, in (or rather by) *October*.

There are various and innumerable Preſcriptions ſet down by Authors for the Cure of Dropſies, which are compounded according to the Opinion and Skill of the Preſcriber. One of *Hippocrates*'s Aphoriſms is plainly againſt Tapping Men for a Dropſy, tho' I fancy this divine old Man had been ſome Time or other frighted into the Opinion, by obſerving that Wounds in Hydropic Bodies were with Difficulty cured; as may be gather'd from the latter Part of the ſame Aphoriſm. Yet, as I juſt now ſaid, the preſent Practice ſeems to warrant the Operation.

Hippocrates was againſt tapping Men for a Dropſy.

I muſt not omit one Thing for the Benefit of my Readers who happen to be afflicted with this ſtubborn Diſtemper. It is the Opinion and Doctrine of the truly worthy Dr. *Boerhaave*, communicated to me ſome Years ago from his own Mouth, *viz.* "that Hydropick People ought ſtrictly and religiouſly

Dr. *Boerhaave*'s Opinion of the Dropſy in Human Bodies.

" giouſly to abſtain from Drinking, and uſe a Diet " of Biſket-Bread and Raiſins, with a little Salt, " and a moderate Quantity of Oily or rich Wines.

Indeed, thoſe ſick of the Dropſy are generally ſo thirſty, that it is impoſſible for them to deny themſelves of drinking Quantities of one Kind of Liquor or other; ſo that, in the Main, they ſhould ſubmit themſelves to Confinement under a truſty Guard, who will keep up to the Directions of a knowing Phyſician, and by that Means they may have ſome Chance, by putting a Force upon Nature, and obliging the Glands in the Meſentery (which by Abſtinence from Liquor are almoſt as dry as Spunges before dipp'd) to imbibe or ſuck up the extravaſated Lymph, and convey it into the circulating Channels once again, and then there is no great Fear but Medicines will have the wiſh'd for Effect.

There are not wanting ſeveral Inſtances to confirm the aforeſaid Doctrine of Profeſſor *Boerhaave*'s; particularly a virtuous and good Lady in *Ireland*, whoſe Name for Decency I forbear mentioning, cured herſelf (as I may ſay) by abſtaining wholly from Liquor of any Kind for a conſiderable Time, during which ſhe eat Biſket and Raiſins. And in my Opinion, there is no Fear of dying for want of Liquid, ſeeing the Body in ſuch Caſe is moiſt enough; and rather than the Vitals will ſuccumb or ſink under the Diſtemper, they will ſupply themſelves with what is ſufficient from the Waters lodg'd in the *Abdomen* or lower Belly: But People are now-a-days ſo over-fond of gratifying their ſenſual Appetite, that a Phyſician might as well ſtay at Home, and perhaps do the Patient more Good than by preſcribing Medicines which are ſure to be taken irregularly, and with no due Decorum or proper Government.

CHAP.

CHAP. XXXII.

Of Hide-bound Horſes.

A HORSE is ſaid to be *Hide-bound* when his Skin ſticks ſo hard to his Ribs, &c. that you cannot with your Hand ſeparate or looſen the one from the other, but with great Difficulty. The Signs.

Several old Authors upon Farriery have omitted the Mention of this Infirmity in Horſes, for this Reaſon, as I ſuppoſe, that when a Horſe happens to be *Hide-bound*, and clung up in his Belly, they preſently pronounced him *Cheſt-founder'd* or *Body-founder'd*: And (as I have obſerved before upon the Judgment of thoſe learned Gentlemen) they were often miſtaken even in what they call the *Cheſt* or *Body founder*: And not only the old Farriers, but likewiſe the preſent, frequently judge a Horſe founder'd in his Body, when in Reality the Ailment lies in the Hoof. However, the Terms *Cheſt founder*, *Body-founder*, and *Hoof-founder*, are very nonſenſical Terms indeed, as they do not convey to the Reader any juſt or true Idea of the Diſtemper. But to return to what we may properly call a *Hide-bound* Horſe.

Beſides the Skin cleaving to his Bones, his Body is lean, his Belly *gaunt*, (as 'tis called,) and the Ridge or Back-Bones ſtand up, his Guts are for the moſt Part very deficient of Moiſture, his Dung dry, hard, and balled, rendering an offenſive Smell more than common. Further Signs.

I cannot ſay but that Horſes fall into this Diſtemper moſtly from bad Keeping, or Riding, and uſing them above their Keep, if I may be allowed ſuch Jockey Term; and ſuch Diſorder happens to them generally upon, or while they are at, Hay; which, if not of a good Kind and well ſhaked from Duſt, very much conduces to render the Blood of this Animal ſpiritleſs, poor, and viſcid; in which The Cauſe.

State I apprehend him to be when he is Hide-bound. And when the Hay is bad, and the Owner ſo like his Horſe that he is Hide-bound too, ſtinting him of his proper and neceſſary Allowance of Oats, &c. For, when the Soul and Silver of the Owner are ſo nearly related, that he can ride his Horſe hard, and keep him low at the ſame Time, 'tis then the Diſtemper is communicated, and that the Horſe becomes Hide-bound and poor-ſpirited like his Maſter. However, the Cure of the firſt may be performed by changing the Paſture; but 'tis much to be feared the Latter will continue Hide-bound, let him be removed into whatſoever Region or Climate.

Hide-bound Maſters make Hide-bound Horſes.

There is one very good Obſervation in Mr. *Gibſon*' Farriery, relating to the Management of Dealers in Horſes, as they are call'd.

This Author, after having in a proper Manner told the Reader how a lean Horſe is to be managed, and that when ſuch Horſe happens to be faten'd too ſuddenly, he becomes jadiſh, broken-winded, lame, or loſes his Eye-ſight; he then proceeds thus; "For while the main Study of thoſe Perſons (meaning the Dealers in Horſes) is only to make them "fat and plump, they ſoften all their Food, that "it may digeſt ſoon, and turn the ſooner to Blood, "and allow them no manner of Exerciſe; being "ſenſible that any ſuch Method will ſoon turn to "their own Detriment."

Now, what Mr. *Gibſon* means by *no Manner of Exerciſe*, muſt be conſtrued, that he allows them not Exerciſe ſufficient or proper to put them in a Condition for a Gentleman's riding.

Moſt People are Jockeys in their Way.

Indeed, I muſt confeſs this is often the Caſe; and pray, where's the Cheat any more than any other Actions of our Lives? Do not all the World ſtrive to ſhew their Goods, &c. to the beſt Advantage? Are not we all in Maſquerade, from the meereſt Cobler, who trims up and poliſhes his Work, even to the higheſt Stateſman, who in Imi-

tation

tation of the Cobler is obliged to ſmooth and colour over his Ends, that his ill concerted Politicks may reliſh the better? Therefore, I inſiſt upon it, that all or moſt People are Jockies, according to the beſt of their Judgments, and Abilities: And that there is no more Reaſon for applying the Name particularly to Dealers in Horſes, than to Dealers in any other Merchandize or Traffick.

If a Horſe become *Hide bound*, by hard Uſage and ill Keeping, it is not properly a Diſeaſe, becauſe it may be removed without the Help of Medicine, to wit, by good Keeping, *&c.* Tho' I own, the Word *Morbus* implies an unuſual Circulation of the Blood, or the circular Motion of the Blood augmented or diminiſhed, either throughout the whole Body, or ſome Part of it. The Cure.

If this Diſorder be the Effect of a Fever, or of ſome other Diſeaſe, if *that be cured which is the Cauſe, the Effect will ceaſe.* But, if the Horſe have no Fever upon him, and that he is Hide-bound from Lowneſs of Blood and Spirits; the Remedies preſcribed for the Cure of the *Yellows* can hardly be amiſs. Therefore I muſt refer the Reader to that Chapter; only reminding him, that, during the Time he is fattening a Horſe from Leanneſs, the Food and Exerciſe ought to be in Proportion to his Strength, eſpecially, if he deſign him for his own Uſe. But if, according to the Way of the World, he would pack off his Goods as ſoon as may be, and with as fair an Outſide as poſſible, or in other Words, if he would jocky his Neighbour, he need only order a little Blood to be taken from a lean Horſe, turn him to Graſs, and let him fill his Veſſels, *&c.* with crude indigeſted Particles, fit only to puff up his Fleſh, and make him ſaleable. And if ſuch a Horſe be deſign'd to fatten up in Winter, it will require a much longer Time than in Summer. However, 'tis beſt done with boil'd Barley or the like, provided the Horſe do not purge too much by ſuch ſlippery Food: But you muſt expect he will

will dung ſoft like a Cow; and indeed if you deſign him for your own Service, it is beſt to raiſe his Fleſh with boil'd Barley, and other Kinds of ſoft Food, White-water, and the like. But again, you muſt have Patience with ſuch Horſe after his Fleſh is raiſed, to harden it with good Oats, Beans, Exerciſe, *&c.* For whatſoever, either vegetable or animal Bodies, is of quick or haſty Accretion or Growth, ſuch Body will abide leaſt Hardſhip, that is, it will be ſooner conſumed or waſted. So that in the Main, *nothing comes up to length of Time and good Meat for making a Horſe perform his Journey ſtrongly.* And I dare ſay many a Horſe is, by the ignorant and unthinking Part of Mankind, deem'd a Jade upon a Journey, when his Weakneſs is owing to Miſmanagements of the Owner or Keeper, whoſe Inconſiderateneſs makes them expect Impoſſibilities. Proceed we now to the *Farcin*, ſometimes ſtiled *Farcy* in Horſes.

CHAP. XXXIII.

Of the Farcin in Horſes.

I Do not know any Diſtemper to which Horſes are ſubject, which is more loathſome or more filthy than the *Farcin*.

The Signs. The *Farcin* is a Kind of creeping Ulcer, beginning with hard Knots and Puſtules, which ſpread ſometimes over the whole Body of the Horſe, like the Branches of a Vine or Ivy-Tree. I ſhall not trouble the Reader with a Deſcription of the Wet Farcy, the Dry, the inward Farcy, the flying Farcy, the corded Farcy, the yellow, or black Farcy, *&c.* becauſe they are all Degrees of one and the ſame Diſeaſe.

The Cauſe. The Cauſe lies in the Blood and Humours: For, as the firſt is in this Diſtemper of too ſlow a Motion, eſpecially in the capillary Arteries, the Glands and ſecretory

ſecretory Ducts will be ſtuff'd with a Kind of ſlimy Matter, and thereby render'd unfit to perform their proper Office of ſeparating each particular Humour, as is required by the Animal Machine.

It is abſurd to imagine the Farcin can be produced from Wounds of Spur-rowels, *&c.* as ſome Authors fondly ſuggeſt; but ſuch Writers when they mention the Farcin to proceed from ruſty Spur rowels, ſurely did not underſtand, that to be hurt or cut with a ruſty Inſtrument is not more dangerous than to be cut with a fine poliſh'd one; or that the Ruſt of Iron is an excellent Medicine given inwardly, even in the Diſeaſe call'd the *Farcin:* For as 'tis now univerſally allow'd by the thinking Part of our Profeſſion, that Medicines operate mechanically; therefore if any of the Particles of Iron, or in other Words, if any of the Ruſt get into the Blood by the Wounds in the Horſe's Sides, it muſt rather aſſiſt in the Cure of the Diſtemper, than otherwiſe, by opening the Obſtructions in the ſmall Capillary or Hair-like Veſſels, and cauſing it to move more briſkly and freely. Therefore, if any of the ancient Farriers have obſerved the Farcin to ſucceed ſore or wounded Sides from ruſty Spurs; I imagine, firſt, either that ſuch Horſes are over exerciſed and heated, and afterwards cool too haſtily; or, ſecondly, that their Food has not been proportionably good as their Exerciſe, *&c.* have been violent. *For, he who rides with ruſty Spurs, generally rides a poor lean Horſe, which is very unfit to anſwer any Kind of Spur*, without moving beyond what he is well able to perform.

Ruſty Spur-Rowels cannot cauſe the Farcin.

It is ſaid, the Farcin is contagious or catching, which I believe may be true, if the Matter diſcharg'd from the Sores happen frequently to fall, or be rubb'd upon another Horſe. Neither can the *Effluvia*, which Horſes in this Diſtemper perſpire, be without Danger, in Caſe ſuch Horſes ſtand conſtantly near others; for it may no doubt be communicated as the Itch in human Bodies, if eſpecially the Horſes lie together.

The Farcin contagious.

That

Farcin which begins in the Head moſt eaſily cured.

That Kind of Farcin which begins in the Head and upper Parts is moſt eaſily cured, unleſs it has got amongſt the Kernels of the Jaws, and towards the Ear-Roots; in which Caſe the *Glanders* are threatned.

Farcin cauſes broken Wind, &c.

If this Diſtemper be not ſpeedily cured, the Horſe in proceſs of Time becomes ſubject to many other Diſeaſes, as the *Yellows*, *Broken-wind*, *Conſumption*, &c. which ſtill renders the Cure of the Farcin more difficult and hazardous.

The Farcin beginning in the Limbs difficult to cure.

When the Farcin begins in the moſt depending Parts of a Horſe's Body, it is difficult to remove it, ſo as to make the Cure laſting; by reaſon it is often attended with the *Greaſe*. I ſhall now proceed to the Cure.

The Cure.

The Cure of the Farcin conſiſts in removing the Lentor, or ſlow, languid, and ſluggiſh Diſpoſition of the Blood, which I ſuppoſe is much divided of its Spirits, and therefore more liable to be obſtructed in the extreme Parts, or ſmall Blood-Veſſels in the Skin and fleſhy Pannicle.

Firſt, Regard muſt be had to the Horſe's Strength; for if he is lean and weak, Purging is forbidden: yet it is neceſſary to begin with a Courſe of Medicines of that Kind, provided the Horſe is well able to ſtand out the Operations. Therefore, I ſay, this muſt be in the Owner's or Farrier's own Breaſt.

Monſieur] *Solleyſell* againſt Purging for the Farcin.

Solleyſell, the famous *French* Author, will not agree to Purging, unleſs the Horſe be coſtive or bound up in his Body, and even in that Caſe he does it by Clyſters. But there is no doubt but Purging Medicines are proper to clear the firſt Paſſages, and lay a good Foundation for the following Medicines. However, I muſt not omit informing the Reader, that many poor Horſes are ruined, and their Conſtitutions ſhatter'd and broken to Pieces very often, by being over purged, according to the ignorant Directions of their ill-judging Owners, or elſe of the Farriers, who have no other Notion of the Farcin, than that it is a Diſeaſe in which the Blood is full

of

of Corruption, and that the Purges they prescribe have an elective or specific Property of carrying away such corrupted Matter with the Dung; and therefore they continue Purging the Horse 'till the very mucous Substance of his Guts is wasted.

I shall not undertake in this Place to shew that there is no such Thing as Elective Purgation, otherwise than as I have mention'd before under such general Head.

If the Horse troubled with the Farcin be full of Flesh, let him be first bled sufficiently, then purged with the common *Aloes Purge*, before prescrib'd for the *Dropsy*, Chap. XXXI. and let this be repeated with a due Regimen for two or three Times at proper Intervals, which cannot be less than a Week: For altho' a Man may be purged every other or third Day, for some Time without Danger, yet I am satisfied, if you purge a Horse oftener than once a Week, you run great Hazards of killing him, or destroying his Constitution.

Bleeding and Purging, when proper.

Horses should not be purg'd oftner than once a Week.

A lean Horse in the Farcin does not require Bleeding or Purging, but rather a Course of *Sudorifick* or Sweating, and alterative Medicines. Therefore, whether the Horse troubled with this Distemper be fat or lean, the following is a proper Ball to be continued for the Space of three Weeks or a Month.

What Medicines proper for a lean Horse in the Farcin.

Take Native Cinnabar, four Ounces; Gum Guiacum, one Ounce; Zedoary Root, and Galangal, of each half an Ounce; Diaphoretic Antimony, one Ounce; Venice Treacle, three Ounces; mix these up with a Pound of the Cordial Ball. If it be too hard it may be soften'd with a little *Syrup of Saffron* or the like, giving Allowance for the Weather. For the Ball will sooner grow hard and brittle in Summer than Winter.

A Ball for the Farcin.

The Horse should have the Bigness of a Pidgeon's Egg of the Ball, twice a Day before his Water, and be duly exercised according to his Strength. For nothing

nothing removes Viſcidity and Clammyneſs of the Blood, or helps to remove the Obſtructions of the Veſſels, *&c.* more than Exerciſe, which puts the whole Vaſcular Syſtem in Motion, (if I may be allowed the Expreſſion,) an Animal Body being as much a Compoſition of Blood-Veſſels as any Thing elſe, ſeeing, ſo far as we can trace Nature through that admirable Piece of Machinery by the Help of Microſcopes, we may obſerve Blood Veſſels. And in the very Cuticula or Scarf-skin of Human Bodies, I have been many Times pleaſed to ſee their Ramifications or Branching-out; but the Injection with which this was performed, I have not been yet able to learn, altho' well acquainted with the Gentleman who performed the ſame at the Royal Garden in *Paris*, where I heard the late Monſieur *Du Verney*, who writ that excellent Treatiſe *de Auditu*, bid fifty *Louis D'Ors* for a Diſcovery of it, upon ſeeing the Blood-Veſſels in the Brain ejected to the higheſt Perfection imaginable. Yet I had great Reaſon to believe the ſame moſtly compounded of Oil of Turpentine, tinctured with the *Rad. Anchuſæ* or Alcanet-Root. But to proceed.

The Lungs ulcerated in the Farcin.

If a Horſe be opened that has died of the Farcin, his Lungs are frequently ulcerated, and his Liver wholly putrefied, and alſo full of Ulcers, which no doubt is cauſed by the hot and corrupt Blood: Yet as I ſaid before, this is not wholly to be cured by purging Medicines.

The moſt promiſing Sign of the Diſtemper or rather its Malignity being overcome, is when the Cords or Knots grow looſe and moveable; for then the ſame may be cured with a moderate Expence, if due Exerciſe be given at the ſame Time.

If the Farcin ſhews itſelf in Ulcers like unto a Hen's Fundament, cauterize or burn them well, and apply the following Unguent with a Bunch of Feathers.

Take

Take common Turpentine, and Bees-wax, of each half a Pound; Freſh Butter clarified, one Pound; French Verdigreaſe in fine Powder, one Ounce and half; Honey, four Ounces: Mix and keep ſtirring till almoſt cold, or the Verdigreaſe will fall to the lower Part of the Ointment, and make it much more abſterſive or ſharp than it ſhould be. Sometimes inſtead of the Verdigreaſe I have known uſed ſome Soot ſcraped off the Bottoms of Braſs-Pans, which when finely powder'd and ſtirr'd in well makes a ſhining black Ointment; and I believe an effectual one in deterging and healing moſt Wounds: For Soot, as I juſt now mention'd, muſt be full of igneous and fiery Particles, and therefore good to apply to Wounds, which for the moſt Part are deficient of a due natural Heat, by Reaſon of the Diſcharge and Expence of Spirits that Way. Ointment for the Farcin.

I cannot ſay I ever knew a Mercurial Ointment, uſed for the Farcin, yet I am ſure it would be very effectual and ſafe, ſeeing 'tis often uſed for the Scab in this Animal. Therefore I ſhall mention one of that Sort, which may be rubbed all over the Horſe in the hot Sun, if in Summer, but, if in cold Weather, it ſhould be heated by a Fire of Straw or the like made all round the Horſe, after which he may be covered warm with an old Rug or the like for a few Days, till the Particles of Quickſilver be got into his Blood.

Take Flanders Oil of Bays, one Pound and half; Oil of Turpentine, two Ounces; Crude Mercury or Quickſilver, four Ounces: Mix the *Quickſilver* and *Oil of Turpentine* well together, then add the *Oil of Bays*, which ſhould be rubbed in for half an Hour, or the Particles of *Mercury* will not be ſufficiently divided. Ointment for the Farcin.

Rub the Horſe all over with this Ointment in Manner aforeſaid once a Week for three Turns, if the

the Diſtemper be obſtinately fixed. After which let him have two or three Purges at due Intervals.

An Ointment for the Diſtemper called the Yaws.

The Negro Slaves in the *Caribbee* Iſles are ſubject to a Diſtemper called the *Yaws*, which, according to the Deſcription I have had of it, reſembles the *Farcin* in Horſes; I mean that Sort where the Ulcers turn out the Lips like a Hen's Fundament. And I have been told from good Hands, that nothing comes up to *Venice Turpentine, four Ounces*; *Quickſilver, ſix Drachms*; mixed for an Ointment to anoint the Sores or Ulcers; and there is a very good Reaſon why this Application along with proper Internals ſhould work a Cure.

In the Cure of the Farcin of any Kind, moſt Preparations from Antimony take Place, and a Courſe of Crude Antimony itſelf, or the *Mineral Æthiops*, for ſome Time, is very proper. The following Preparation is, I think, as effectual as any to eradicate this ſtubborn Diſtemper.

A Powder for the Farcin.

Take Butter of Antimony, and Bezoar Mineral, of each an Ounce; mix and make a Powder; which may be beat up with half a Pound of the Cordial Ball while the Ball is moiſt or ſoft enough to take it up.

Give the Horſe the Bigneſs of a Wallnut, or three Quarters of an Ounce of this Ball every Day for two or three Weeks, letting him faſt two or three Hours after it, and have moderate walking Exerciſe. Its Operation is by Sweat and Urine, and in Human Bodies the Mineral Bezoar will ſometimes vomit, but it is a very ſafe and effectual Alterative in Horſes if continued for ſome Time, otherwiſe little Good can accrue from its Uſe. But I adviſe every one who value their Horſe's Health, to buy ſuch Things from the Apothecaries-Hall in *London*, where they may be ſure to have it genuine: But the Chymiſts are the greateſt Jockies of all others; for theſe and ſuch like Artificers, who keep Medicine-Warehouſes,

The Author adviſes to buy Chymical Medicines from the Apothecaries Hall.

houſes, frequently ſophiſticate it with half or two hirds of Flowers of *Sal Armoniac*.

Moſt Preparations from Antimony are of Uſe in he Farcin, as I ſaid before, particularly the *Anti-ectic um Poterii* may be given from two Drachms o half an Ounce every other Day. The Doſe may e made up with a little of the Cordial Ball as Oc-ſion requires; but of all Things the Owner muſt ave Patience, ſeeing, in theſe obſtinate Caſes, the ery Craſis of the Blood muſt be alter'd from a cor-upt and morbid to a healthful and balſamic State.

Antihectiſcum Poterii good in the Farcin.

Laſtly, I ſhall ſet down a Method of Cure, which have been told from good Hands hath often ſuc-eeded; particularly my old Friend the Farrier whom took Occaſion to mention before, told me he had ften cured the Farcin by ſuch Means, when all thers he was able to try had failed. Before I ſet t down I muſt confeſs to the Reader, that I cannot give any right Reaſon why ſuch Practice ſhould re-nove the Diſtemper, unleſs it be brought about rom the new Turn it gives the Blood and Juices: For as my Friend told me he could make a Horſe xceeding ſick this Way, when he could no Way o it by other Methods or Medicines which he uſed n the Farcin, and his Method was this, which I ſup-oſe he had borrowed from *De Grey*, for I ſee the ame in his Book.

Take one Handful of the tendereſt Tops of Reeds ruiſe them well in a Mortar, then mix about two Ounces of clear render'd Hog's-lard with it, and ut it into the Horſe's Ears, ſtitching them up after-ards, and let him ſtand tied up for twenty-four Hours at leaſt without Food.

De Grey's Method of curing the Farcin.

Put a little Wool upon the Compoſition in each ar to keep it in the better, and after twenty-four Hours unſtitch the Ears, and turn him to Graſs; or, *De Grey* tells us, he may be wrought after it, *r the more he's ſtirred, and the more ſpare his Diet, e ſooner he is cured.* But we muſt take *De Grey's* Meaning to be with Relation to a fleſhy Horſe, which may

may have contracted the Fa c'n from foul Feeding and Want of Exercise; and then indeed his Diet should be spared, and Exercise pretty sharp: But 'tis otherwise with respect to lean Horses which are afflicted with this Disorder.

If the Green Ointment (*p.* 283.) be not strong enough, but that fungous or proud Flesh is seen to arise about the Wounds, you may mix with every Ounce of Ointment a Drachm of *Gum Euphorbium* in fine Powder, whose Alcaline Qualities we are assured from good Hands, destroy the Acids which corrode Ulcers, and even the Bones themselves so as to induce Rottenness.

CHAP. XXXIV.

Of the Mange or Scab in Horses.

I Shall not trouble the Reader with a long or tedious Description of the Scab in Horses, by Reason the Distemper is so easily known from any other.

The Mange or Scab in Horses is a skinny Distemper, therefore outward Applications will be found most available. The *French* call it the *Elephantick Malady*, because Elephants are much subject to such Disorders.

The Signs. It is a Kind of a formal Leprosy which often begins in the Neck, Main, or Tail, and causes the Horse to be ever rubbing or scrubbing: The Hair will stare, and in many Places peel off, and fall away, and a loathsome Scurf remains after it.

The Scab is well known to be infectious, otherwise our Laws would not provide, that no such Horse should be suffered to go loose, or in a common Pasture, lest he infect his Brethren.

The Cause. The Cause of the Scab or Mange proceeds from the Blood's being of too thin a Texture, and full of *Serum* of a sharp, pungent, or corrosive Nature. I

is often brought on from Over-heating and Cooling too fast, from low Feeding, &c. And I have observed, that the Lime-burners Horſes are very ſubject to the Scab, which I think may proceed from the Lime falling upon them, which ſo heats and dries their Skins, that the Pores and Excretory Ducts of the Miliary Glands are obſtructed and drawn together in ſuch Manner that the perſpirable Matter cannot fly off, but is ſtopped between the *Cutis* and *Cuticula*, and there corrupts and frets the Parts, ſo that both the true and Scarf-Skin appear very ugly and full of Wrinkles.

The Cure.

There are a vaſt Number of Noſtrums or pretended never-failing Receipts for the Scab in Horſes; but I ſhall in a few Words ſhew what is, of all, the moſt effectual and ſafe Method to be uſed in ſuch Caſes.

Firſt then, if the Horſe be ſcabbed from Poverty, he ſhould change his Manner of Living: For, *Diſeaſes* (as I have often ſaid) *are cured by their Contraries.* And tho' Bleeding is not abſolutely neceſſary in lean Horſes troubled with this Diſtemper, yet I think both that and Purging are ſo when the Horſe is full of Fleſh: And in either Caſe, I mean, whether the Horſe is fat or lean, let the following Ointment take Place.

Mercurial Ointment for the Scab.

Take Oil of Bays, (or even *freſh Butter,*) *one Pound*; *Quickſilver, four Ounces*; *Oil of Turpentine, two Ounces*; *black Soap, four Ounces.* Mix the *Oil of Turpentine* and *Quickſilver* well, then the *Black Soap* and *Oil of Bays*; but mind to rub the Ointment a long Time 'till none of the Particles of the *Mercury* appear to a young Eye; for by this it is render'd much more effectual in removing the Scab. Rub the Horſe all over in the Sun, or by a Fire of Furz, or the like. But I own the Scab is ſooneſt cured in the Spring, when the Sun begins to have Power, and when Graſs has Juice and Feeding in it; and I believe the above Quantity will be

ſufficient

ſufficient for curing two Horſes, if the ſame be rubb'd well in, or rather thro' his Hide.

The Ointment ſometimes purges.

This Ointment ſometimes purges a Horſe; tho' if he is any thing like ſound it will not do him Harm, and if he is otherwiſe e'en let him take his Chance; for if he ſtand the Scouring it may come to be of Service to him, beſides curing him of the Mange or Scab.

Crude Antimony proper after the Ointment.

After ſome Time, the Horſe ſhould take *Crude Antimony* in Powder, about an Ounce at a Time 'till he has eat a Pound, in ſcalded Bran, or mix'd with his Corn, after it has been ſprinkled with a little Water, that the *Antimony* may ſtick to it the better.

There are various Forms of Medicines, both inward and outward, ſet down by Authors for the Cure of the Scab: But the Method I have juſt now mention'd is by far the moſt effectual; and pray where is the Good of putting down a long Train of *Recipes* for each Diſtemper, when they only ſerve to embarraſs and confound the common and ordinary Reader, who it muſt be ſuppoſed is not able to pick out the moſt effectual and beſt contrived Remedies, but rather is apt to chooſe that which has the greateſt Number of Ingredients in the Compoſition.

CHAP. XXXV.

Of Tumours, Impoſtumes, and Wounds in general.

Tumour, Abſceſs, and Impoſtume, what.

BY a *Tumour*, *Abſceſs*, or *Impoſtume*, I would be underſtood to mean Swellings of any kind, tho' the firſt is moſt applicable to thoſe kinds of Swellings which have not any *Pus* or Matter in them. Thus any Excreſcence upon the Body which is preternatural may be call'd a *Tumour*: But an *Abſceſs* or *Impoſtume* is a Collection of *Pus* or Matter in any Part of the Body, and is cauſed either from an Obſtruction

ſtruction of the Fluids in that particular Part, which makes them change into ſuch Matter, or from a Tranſlation of it from ſome other Part where it is generated.

Whenſoever a *Tumour* happens, the firſt Method to be uſed is generally to diſſolve or diſperſe it, *provided the ſame is not form'd by a Tranſlation of Morbifick Matter caſt off from the Blood, in order to terminate a Fever or other Diſorder of that Fluid*; for in ſuch Caſe to attempt a Diſſolution of the *Tumour* might bring on worſe Evils. And yet I have obſerved in Human Bodies, that *Abſceſſes* form'd from the Matter of a *Fever*, or other acute Diſtemper are moſt obſtinate of Cure, and the Wound (upon opening ſuch *Abſceſs*) and Parts adjacent are more than ordinarily deſtitute of natural Heat.

Firſt then, if you would attempt Reſolution or Diſperſing the Swelling, all Applications of auſtere or four Things, ſuch as *Vinegar*, *Verjuice*, *Lees of Wine*, (eſpecially *Red Wine*,) and the like, are beneficial; ſo is every Thing potentially cold, or which is actually ſo: But moderate and proper Bandage, in my Opinion, will hinder the Growth of any *Tumour* or Swelling ſooner than any Application whatſoever, for Reaſons already aſſign'd under the general Head of *Repellents* or Medicines which drive back *Tumours*. Therefore thither I refer the Reader for his farther Satisfaction in the Cure of Swellings by diſperſing them. Tho' this I muſt put him in Mind of, *viz* that when he has diſperſed a Swelling, he ought to purge the Horſe once or twice, in order to cleanſe his Blood as much as poſſible of the offending Humours which may be driven back into it. The firſt Intention of a Cure.

The *Second* Intention of a Cure in Tumours or Swellings, where there is great Heat, *&c.* is by Suppuratives or Ripeners as they are ſtiled; and of this I have treated ſufficiently under thoſe general Heads. However, I ſhall ſet down a Cataplaſm or The ſecond Intention of a Cure.

Poultis for ripening any Swelling where ſuch Things can be applied with Conveniency.

A Poultis to ripen any Tumour or Swelling.

Take Leaves of Mallows, and Marſh-Mallows, each ſix Handfuls; White Lilly-Root, half a Pound; Fenugreek, and Linſeeds, of each four Ounces; purified Hog's Lard, about two Pounds. Mix.

The Seeds ſhould be firſt bruiſed and boil'd in about three Quarts of Water to two, or 'till the Liquor ſeems a Jelly. The Leaves and Root muſt be boil'd well, and the Water preſs'd ſtrongly out between two Boards; then beat the *Jelly* and *Hog's-Lard* well up with them, and uſe it very warm and thick ſpread, as you ſee Occaſion, 'till the Swelling is fit to be open'd or otherwiſe diſperſed away; for if Nature (and no doubt ſhe is the beſt Guide) deſign that the Tumour or Swelling ſhall ſuppurate or ripen, this Application aſſiſts in ſoftening the Skin, *&c.* and relaxes the parch'd *Fibrillæ*, which were before ſo corded and upon the Stretch, that the Motion of the Heart was ſcarce ſtrong enough ſufficiently to protrude the offending Matter. And again, if Nature deſigns a Reſolution of the Swelling, ſuch Poultis is no ways diſagreeable; for by its ſoftening Quality it helps to eaſe the Pain and Inflammation, and thereby gives Vent to the offending Humours either outwards or inwards, as Nature ſhall point out moſt for the Benefit of the Sick.

The Author juſtifies his Theory.

It may be objected by ſome, who can ſooner ſpy a Fault than mend one, that herein I contradict my own Theory of Repellents, ſeeing I make one and the ſame Poultis ſerve both as a Repellent, and Ripener: But I beg of ſuch to conſider a little, that this Poultis acts no otherwiſe as a Repellent than as it cools and eaſes the Inflammation; and whatever Application does this muſt hinder a greater Flux of Humours to the affected Part. Thus *Opium*, tho' not ſtrictly ſpeaking of any Reſtringent Quality, frequently

frequently ſtops a Looſeneſs, which it performs in a different Way from *Lemnian Earth*, *Bole Armoniac*, *Dragon's Blood*, and the like. But as a great many Things go to all Things, it muſt not be expected that I ſhould give a mechanical Account of the Operation of every Thing I preſcribe in this Book; therefore I hope no Body will condemn me before I be further heard, if any Perſon ſhall ſee Occaſion to call me to a Vindication of my Writings.

How to open Tumours or Swellings.

When any Tumour or Swelling is become ſoft, ſo that the Matter may be felt to fluctuate under the Finger upon Preſſure, then 'tis proper the ſame ſhould be open'd the whole Length, (if it can be done with Safety,) and not croſs-ways, but according to the Direction of the Fibres. Tho' if the Swelling be very ſuperficial, I mean only Skin-deep, it may be open'd any Way according to the convenient Situation of the Part in which it lies; but what I mean by opening Swellings according to the Direction of the Fibres is, that none of the Tendons or Leaders, as they are call'd, may be cut; for if any of theſe happen to be touch'd, and their Fibres divided tranſverſly or a-croſs, any Perſon may judge the Conſequence from what I have before ſaid in my Deſcription of the Nature and Elaſticity of an Animal Fibre.

I have ſet down the Form of an Ointment, (Pag. 283.) which ſhould be conſtantly kept ready in thoſe Stables where there are many Horſes; for Accidents, as Wounds, Bruiſes, *&c.* are happening every Day, ſuch as Over-reaching when the Horſe ſteps ſo far with his Hind Foot that he cuts his Fore-Heel: I ſay, the Ointment deſcribed Page 283. in the Chapter of the *Farcin*, is a very convenient Ointment to be kept for conſtant and common Uſe to Wounds of all Sorts. Only when they happen to be old Wounds, as Fiſtula's, and the like, it is neceſſary firſt, to deſtroy all the Calloſities or hard and horny Subſtance either by Knife or Fire, and then apply the Ointment very warm upon

Hurds, &c. And it is for old Wounds especially that I have order'd the Soot to be mix'd with it as Occasion offers.

If fungous or proud Flesh happens to put forth, which is very common, you may wash the same with the following Water as often as there is Necessity for it.

A Water to eat away proud Flesh.

Take Corrosive Sublimate, half an Ounce; dissolve it in a Pint of strong Lime Water, which it will turn of a Yellow Colour. Keep this in a Bottle with a Stopple made of *Bees Wax* or *Glass*.

Wounds simple and complicate.

I shall not make any needless Distinction between simple and complicated Wounds, the first being reckon'd only a Division of the fort Parts without the Concomitancy of other Accidents, and the latter where there is a Contusion or Bruising of the Flesh at the same Time the Wound is given, and sometimes a Fracture or Dislocation of the Bones, all which Circumstances only make the Wound longer, or more difficult of Cure. Tho' if these Wounds which lie deep, and where the Bones are hurt, be dress'd with Hurds dipp'd in *Tincture of Myrrh* or *Tincture of Euphorbium* at the Bottom, and the rest of its Parts with the aforesaid Ointment, there is no Danger but, in Time, they will do well.

Mr. *Gibson*'s Mistake about Wounds of the Brain.

I must here take Notice of Mr. *Gibson*'s Mistake, Page 194 of his Book, where, after speaking of Wounds of the Viscera, he says, "Wounds penetrating the Substance of the Brain are also incurable, because of its Softness, the Multiplicity of its Vessels, and the Tenderness of its Membranes."

Now it is universally agreed, that Wounds upon the Brain of Animals are not always mortal, tho' if I remember right, our Countryman, Mr. *Wiseman* says, that the Patient may live till the wounded Lobe be wasted away and consumed, but cannot survive afterwards: Yet I have more than once been

been call'd upon, where the very Subſtance of the Brain has been wounded, and that a good Portion of it, together with the *Dura* and the *Pia Mater*, have come away with the Dreſſings, after the fractured Pieces of the Skull have been removed. So that from this it may be ſeen how much the *Ancients* were miſtaken with relation to Wounds upon the Brain, which are not, in my Thoughts, provided they do not happen upon the *Cerebellum* or back Part of it, near ſo dangerous as Wounds of the Liver, Lungs, Stomach, or Inteſtines, ſetting the Heart aſide; for that moſt noble Part, I own to be the *Primum Mobile* of the whole Animal Machine: And yet there are not wanting Inſtances, where even Wounds of the Heart have not prov'd Mortal, particularly I remember the Heart of a Deer kept as a Rarity at *Lowther-Hall*, the Seat of that honeſt and worthy Nobleman the Lord Viſcount *Lonſdale*, which had a Muſket-Ball lodged in it, that was healed over, aud a callous or hard Subſtance all round it; which convinced me plainly, that ſuch Ball had been lodged there a conſiderable Time before that which might be the Death of him: And herein we may find, that Nature will often perform Things beyond the Reach of human Skill or Foreſight.

A Muſket Ball in the Heart of a Deer that recovered.

If a Horſe be wounded in the Stomach or Paunch, Guts, Liver, *&c.* I think 'tis hardly worth while, conſidering the hazardous Event, to attempt a Cure. Yet, if his Scull happen to be fractur'd, there is no Doubt but he might as ſucceſsfully be trepan'd as Man. And if it is ſo broken and ſhatter'd that with an Inſtrument called a *Levatory* the Farrrier may raiſe up and take out the Fragments, I ſay then the Wound may be healed with the following Compoſition.

Wounds in the Stomach *&c.* exceeding dangerous.

Take Honey of Roſes, half a Pound; Spirit of Wine, four Ounces. Mix.

A Mixture for Wounds of the Brain.

When the Bones or Fragments are carefully remov'd, cut a Piece of fine thin Silk or Linen Cloth a little bigger than the Hole in the Scull, fasten it in the Middle by passing a little Thread thro'; dip this in the Mixture when warm'd, and cover the Orifice or Hole, then fill the Wound with Dozels of Lint dipp'd in the same; after which bind on a double Cloth, *&c.*

How to know when the Lungs are wounded.

If the Lungs be wounded, the Air will penetrate thro' the Sore with a Frothy Head of a Vermilion Colour. Yet I have often known ignorant People imagine Wind or Air to come strongly thro' the Wound, and that the same went down at the Mouth, and so on even till it blew the Candle out; whereas it was only the very Air that passed in at the Orifice on Expiration, or breathing out the Air in the Lungs; for when these are again expanded and stretched on Inspiration or drawing in the Breath, the Air between them and the Diaphragm or Midriff, or any where in the lower Belly, must necessarily be forced out thro' the Wound. And I well remember a Surgeon to have gain'd great Reputation for his Skill in curing a Wound caused by a Plowshare in a Boy's Side, when it was supposed the Air came thro' his Lungs and blew the Candle out, tho' at the same Time, neither the Lungs nor any principal Part was touched in the least: But the common Integuments being cut thro', the Air on Expiration went in, and on Inspiration return'd again, and put out the Candle. So you see how unfit the common-people are to judge of Merit, seeing, as I suppose, there are few either Physicians or Surgeons will care to undeceive them, when they cry up the Cure for a greater Matter than what it really is: And for my part, I am very well convinced from many Observations, that the Practice of Physic, as well as Surgery, in some of its Branches, especially that of Bone-setting, is turn'd into mere Sham and Knavery. And so far they resemble the Law in this Particular, that if the Professors

The common People unfit to judge of Cures.

were

were always to ſpeak Truth, their Fees would not be by far ſo numerous. Yet I would fain hope there are ſome in all Profeſſions, who will not barter their Conſciences for that vain, empty, and unmerited Praiſe before ſpoken of, or even for *Golden Fees* which are moſt tempting. But to return.

How to know if the Stomach or ſmall Guts are wounded.

When the Stomach is wounded, there will be violent Sickneſs, with ſudden Loſs of Appetite; and if any of the ſmall Guts are run thro', the *Chyle* uſually iſſues out of the Wound, tho' 'tis hard to know it from Matter after the Wound begins to digeſt.

The Kidneys and Bladder.

If the Kidneys be wounded, the Horſe ſhall ſtale Blood; and if the Bladder, then the Piſs ſhall iſſue forth at the Orifice of the Wound. Therefore, by theſe and many other Signs too tedious to mention may inward Wounds be known.

I ſhould, before I had put down the Compoſition of an Ointment, have told the Reader, that if there is great Hemorrhage or Loſs of Blood, the ſame muſt be firſt ſtopp'd by the following ſtyptic Compoſition.

An excellent ſtyptic Powder, commonly call'd *Colebatch*'s Styptic.

Take any Quantity of Filings of Iron, and pour upon them Spirit of Salt to the Height of three or four Fingers above them; let them ſtand in a gentle digeſtive Sand-Heat, or near the Fire, till the Fomentation is over, and the Spirit of Salt is become ſweet; then pour off what is liquid, and evaporate it in an Iron or Glaſs Veſſel until half is conſumed; at which Time put to it an equal Quantity of Sugar of Lead, that is, the Weight of the remaining Liquor, and evaporate to a dry Powder: But the Operation ſhould be ſtopp'd upon its becoming pretty dry, or it will not have ſo much Virtue as it ought.

This is that *grand Styptic*, for the Sale of which there was once a Patent obtained. The Difference in that ſold by Patent and this, I have not put down, being ſo immaterial that it is ſcarce worth Notice. Nor need I trouble the Reader with any other ſtyptic

Forms either ſolid or liquid; for, if this will not ſtop the Blood, the Caſe is deſperate. And before I quit the Subject I muſt declare, that I have not found a more powerful or effectual Styptick in the whole *Materia Medica*, either outwardly apply'd or inwardly adminiſtred. The Doſe to a Horſe inwardly, either to ſtop Bleeding or even moſt kinds of Fluxes, is about two Scruples or a Drachm. Mix it with a little warm Ale or red Wine, Nutmeg and Sugar if you pleaſe, and give it Milk-warm: If this fail in two or three Doſes, every Day one, I cannot ſay what will anſwer; for, I have known it ſtop the Bleeding of an Artery, which has been cut, upon unskilfully ſtriking the Fleam into a Horſe's Neck to let him Blood; and this it did after moſt other Remedies had been unſucceſsfully try'd.

There are ſome Surgeons and Apothecaries, I believe, keep this Preparation; and really none ſhould be without ſuch a Thing, by reaſon 'tis often wanted in Haſte. Therefore if you ſend for it to the Apothecaries, enquire for it by the Name of *Colbatch's Styptic*; and if 'tis good, it will be in little hard Lumps of a browniſh Colour; but if it has been kept badly cork'd, it has loſt its Virtues, and becomes moiſt and ſoft.

Little to be done in inward Wounds beſides ſtopping the Blood.

There is little to be done in the Caſe of inward Wounds more than ſtopping the Efflux of Blood; for Nature muſt perform the Reſt of the Work. Yet no doubt but Surgeons, as well as Farriers will pretend to heal ſuch Sores by applying Ointments, Plaiſters, *&c.* to the outward Orifice, when in Fact they might as well, and with as much Reaſon apply the ſame to the Patient's Heel as to his Side, for a Wound either in the Lungs, Liver, Stomach, *&c.* which lye far beyond the Power of outward Applications. Therefore a proper cooling and balſamic Regimen is, no doubt, all (after ſtopping the Blood) which either Phyſician or Surgeon can put in Practice for the Benefit of the Sick.

In

In Cases where any large Branch of an Artery is wounded, the Method is to separate the muscular Flesh from about it, if it can be done with Safety, and by passing a blunt, long, and crooked Needle, with an Eye made in the Point, under the Artery with double Silk waked a little, the same may be tied strongly both above and below the Wound or Hole in the Blood Vessel; and this Operation is stiled *the Operation for an Aneurism*. But it must be considered, it is much harder to be performed upon a Horse than a Man in several Parts of his Body, for Reasons too tedious to enumerate. Therefore, if Blood cannot be stopped by the Styptick I have mentioned, I think 'tis in vain to attempt farther.

Artery large, if wounded, what is to be done.

A proper Quantity of it should be laid upon the Part, according to the Emergency; and be sure you always force it down, and hold it upon the very Vessel that spews out the Blood, if it can be done outwardly; if not, it may be given inwardly, as I have already taught: And I dare say it will hinder the Horse from bleeding to Death, if any thing in the whole Universe will: seeing nothing which has yet been discovered in the chymical Pharmacy comes up to Preparations from Iron or Vitriol, for stopping large Hemorrhages or Bleedings.

I hope I need not tell the Reader, when any Wound requires to be stitched together, seeing his own Judgment will easily point out that to him: For, Wounds in the fleshy Parts, and when they happen according to the Direction of the Fibres commonly called the *Leaders*, these are frequently stitch'd; but it is otherwise among the Tendons or Sinews, which the Needle might prick, and do more Hurt than the first Accident.

What Wounds may be stitch'd.

When a Tendon happens to be cut quite asunder, there is an Operation perform'd which is called *the stitching of the Tendon*; which is done by laying one End over the other about half an Inch, and so passing the Needle and waxed Silk two or

A Tendon cut, what's to be done.

three times, thro' them, and dreſſing the Bottom of the Wound with ſpirituous Dreſſings, and the Lips with the Ointment, *p.* 283. of this Book.

Laſtly, when any freſh Wound that lyes deep requires to be ſtitch'd, I adviſe, that the Farrier do not only puts his Needle skin deep, but a good Way into the muſcular Fleſh, otherwiſe the Wound will be left in ſuch a Condition, that the congealed Blood will become corrupt, and hinder the ſound Healing of it, and often make it turn fiſtulous, &c.

In Caſes of Wounds, the Part muſt be kept free from Motion.

One Thing muſt always be obſerved, *viz.* that when any Creature is wounded, Keeping the wounded Part (as much as poſſible) free from Motion is half the Cure; for I have known many a ſlight Wound, eſpecially if amongſt the Tendons or Sinews, which might have been cured in a little Time, provided the Creature had not ſtirr'd about: But by ſuch Male practice a Flux of Humours has been occaſion'd, and a Gangrene and Mortification ſorely threatened, and ſometimes brought on. 'Tis therefore, that I adviſe reſting the wounded Part; and if the Horſe will not lye down in a wide Stall,

To make a Horſe lye down.

he ſhould be forced to it by tying one of his fore Feet cloſe, and faſtening a Cord or ſmall Rope about the other Fetlock, and bringing the End of it over the Horſe's Shoulders; and by hitting him a Kick with your Foot behind that Knee, and at the ſame time pulling his Noſe down ſtrongly to the Manger, you will bring him upon his Knees, where you ſhould hold him till he's tired, and that cannot be long; but if he don't lye down ſoon, you ſhould get ſomebody to thruſt ſideways againſt his Quarters to throw him over. Mind your Halter be good, and Staple in the Manger ſtrong, and by forcing him down ſeveral Times in this Way, you may teach him to lye down at the ſame Words you made uſe of when you firſt caſt him, for they are exceeding tractable Creatures.

I know

I know nothing better for inward or outward Wounds than what's commonly called *Balsam de Vervain* or *Vervain's Balsam*, which made so much Noise in *Ireland* some time ago. The *Recipe* I shall put down, as I receiv'd it from a faithful Friend, who profes's'd it was genuine; but whether it be so or no, I am sure the Composition is according to Art. The Balsam is this:

Take Gum Benjamin, one Ounce; Storax six Drachms; Peruvian Balsam, half an Ounce; Succotrine Aloes, six Drachms; finest Myrrh, two Ounces; Tops of St John's Wort, two Handfuls; rectified Spirits of Wine, three Pints. Cut the Herb small, bruise the Gums, &c. and infuse in a warm Place, for three or four Days, till the Tincture be made as strong as 'tis possible for the Ingredients to make it; and decant it off as Occasion offers.

Vervain's Balsam for all Kinds of Wounds.

This Balsam or rather Tincture is to be syringed now and then into the Wound, if the same lye deep; otherwise, 'tis sufficient to smear it all over with a Feather, and cover it with Lint or Tow, proper Bandage, &c.

There is one good Observation in Mr. *Gibson's* Book, with Relation to Gun-shot Wounds, *(viz.)* "that such Wounds are not subject to bleed much, "by Reason of the Bruising and Contusion which "accompanies them." And this indeed is one Happiness, seeing so many Horses must be wounded in Battle.

The first Thing to be attempted in Gun-shot Wounds is to extract the Ball, if the same be lodged so as safely to be come at; and in order to this, the Horse should be put in the very same Posture, in which he was when he receiv'd it, otherwise it will be impossible to extract it, by Reason of the bellying out of the Muscles; and besides, this Operation should be done as soon as possible, or the Ball will fall by its own Weight, and

The Manner of extracting a Ball out of a Gunshot Wound.

by the Motion of the Parts, insomuch that it can in no wise be laid hold of. The Instrument for extracting Balls, or other foreign Bodies, forth of deep Wounds, is a hollow Pipe or long *Cannula*, which contains a small Piece of Steel, with a kind of sharp Screw at the End, made in the Manner of that we raise the Scull with when depress'd, and when you touch the Ball with the End of the smooth *Cannula*, you turn forward the Screw, and so extract the Ball, Pieces of Rags, *&c.*

Gold or Lead will lye amongst the Muscular Flesh many Years without Damage. Two great Advantages attending the Misfortune of Gun-shot Wounds.

I know no kind of foreign Body that will lye in the Flesh without Corruption, besides Gold and Lead, but these will for many Years. And we have Instances of Soldiers who have receiv'd Balls about the Neck, Shoulders, *&c.* and after a Number of Years, those very Balls have fallen down as low as the Loins, Hips, *&c.* where they have been drawn out. So that in the Main, these are two very great Advantages attending the Misfortunes of glorious Actions, (*viz.*) that Gun shot Wounds are seldom or never deadly (provided they miss the very Vitals) from Loss of Blood. Nor is the Ball of any corroding Metal, but rather of a friendly Nature and Disposition; and unless some Rag or other foreign Body be driven in by the Force of the Ball, the Lead does not much incommode the healing of the Wound. Yet no doubt but it is possible to make Bullets, Arrows, *&c.* poisonous by letting them remain for some Time in certain Liquors, or Juices of Plants; but the Enemy who is guilty of this can never be call'd a fair one.

Burnt with Gun-Powder, *&c.*

If a Horse happen to be burnt or scorched with Gun-powder, *&c.* the best Application is Spirit of Wine and Camphire, about a Drachm of the last to each Ounce of the first; and afterwards, I mean in about half an Hour, anoint the Part with common Oil, which is of as good Effect as Oil of Roses, Oil of St. John's-wort, or Lintseed-Oil as prescribed by Mr. *Gibson* in like Cases; and I am satisfied that Spirit of Wine camphorated, is the very best

Spirits of Wine and Camphire.

best Thing that can be applied to a Burn or Scald in Human Bodies, provided the same be used immediately, and before the Scarf-skin be raised into a Blister; for it will preserve that Skin from coming off, and entirely take away the Complaint. But if the *Cuticula* or Scarf-skin be raised by Serum or watry Humour under it, it should rest there a proper Time, and then be let out, the Skin taken away, and the Blister healed with Melilot Plaister, in the common Way; for there is little Difference whether a Blister be raised by actual or potential Fire, only the first is quicker and smarter; but one and the same Management will serve for the Cure of either, when the outward Skin is come off. And as to what the common People say of Fire being in, or Fire being out of the Part, 'tis a Pack of Nonsense: for if they'll only have a little Patience, and dress with common Melilot Plaister, the Inflammation, which they term Fire, will go off by a Discharge of Serous and other Humours from such superficial Wounds.

Best Cure for Scalds in Human Bodies, &c.

If the Burn be exceeding violent, so that the Horse's Hide is much scorched, I cannot warrant that the Spirit of Wine, &c. will be of so great Avail, by Reason the very Skin is burnt as it were to a Cinder. Therefore in such Case you must apply the common green Ointment prescribed, (*p.* 283.) pretty thick and warm upon Tow, and in some reasonable Time the Eschar or thick Scab upon the Wound will separate. After which continue the same Dressings, 'till the Part affected be well, and then there is no doubt but 'tis cured, as I told Captain *Burdon* by his Turnep-Poultis.

The green Ointment proper, and when.

If the Horse be feverish, I mean, if he has a Symptomatic Fever from the Pain and Inflammation of the Burn, then he should be bled, and have Clysters to cool him, and whatsoever he drinks should be a little warm'd.

Bleeding, Clysters, &c. to cool the Inflammation.

CHAP.

CHAP. XXXVI.

Of a Gangrene and Mortification.

MR. *Gibſon* defines a *Gangrene* to be a ſudden and violent Inflammation with intolerable Pain, and that the ſame is no other than a beginning Mortification.

Now this Deſcription of a Gangrene I take to be very lame, for by it one would be induced to believe every ſudden Inflammation a beginning Mortification. Therefore I ſhall offer another Account of this direful Phœnomenon.

The Author's Account of a Gangrene.

The Signs of a Gangrene are when the Symptoms of Inflammation too ſuddenly diſappear, without taking away the Cauſe; a dull Senſe in the Part, Softneſs, Flaxidity, not riſing again if depreſs'd, Puſtules full of a Lymphatic or watery Liquor, ſometimes yellowiſh, at other Times of a reddiſh Colour, in and about the Place inflamed. After this, comes on a deadly Blackneſs of the Fleſh, *&c.*

A Mortification, what.

In a perfect Mortification, which Word has its Etymology from *Mors*, Death, and *facio*, to make, the natural Juices quite loſe their proper Motions, ſo that they fall into a fermentative one, and thereby corrupt and deſtroy the very Texture of the Parts; Senſe and Motion in this Caſe are entirely taken away; (I mean in the Limb affected) there is a cadaverous Smell, and a deep mortiferous Corruption preying upon all the adjacent Parts, even to the very Bones themſelves; a Gangrene is preſently to be remedied, but a Mortification or Sphacelus immediately to be extirpated, or cut away by the very Roots.

Mortification in old Age deadly.

If this Diſtemper happens to an old Horſe, whether naturally or by Accident, it is almoſt always deadly; and in Human Bodies, from whatſoever Cauſe a Mortification proceeds, if the ſame fall upon the Aged, or Hydropical, Phthyſical, or Scorbutic Habits, it moſtly carries the Patient off.

In

In the Cure of a Gangrene, nothing exceeds timely and ſmart Scarification, or cutting into the Part, in ſeveral Places, to diſcharge the fermenting Blood and Humours tending to Corruption. And really the Ichor which flows out in ſuch Caſes is of ſo corroſive a Nature, that I have been often, in Human Bodies, ſurprized to ſee it immediately take away the Poliſh of a fine Steel Inſtrument, and tinge the ſame with a bluiſh Caſt, which ſhews the Juices to be in ſtrange Confuſion and Diſorder. The Cure of a Gangrene.

After Scarification it is neceſſary to waſh the Sores and all round the Part with ſtrong and warm Lime-Water, with ſome *Sulphur Vivum* in Powder mixed with it; about a Quarter of a Pound to two Quarts of the Lime-Water will be ſufficient. The following is likewiſe of great Service in ſtopping a Mortification. Lime Water and Sulphur good to ſtop a Mortification.

Take Oil of Turpentine, four Ounces; Tincture of Myrrh-Aloes, one Ounce; mix, and waſh the Sores, after Scarification, with it very hot twice a Day. But of all outward Applications, a very good Author recommends the following Solution. A Mixture for a Mortification.

Take Spirit of Nitre, (I ſuppoſe he means that made with Oil of Vitriol,) for want of that Aqua-fortis, two Ounces; Quickſilver, one Ounce. Mix. Moiſten Cloths in this Liquor, and fold them round the Gangrened Part, and as our Author ſays, the Dead will readily ſeparate from the Sound; nor is there, ſays he, any Occaſion to think of any other Medicine for a Gangrened, ſeeing there is not found one which performs the Work ſooner or better. A Solution for a Gangrene.

I muſt own I never tried this Solution of Quickſilver in the Caſe *Belloſte* (for he is my Author) mentions; but as he is a very old Man, and of long Experience in a very extenſive Practice, I think I am not to blame to copy after him. Though I muſt own this Gentleman has rather carried the Jeſt

too

too far, when his Veneration for Crude-Mercury or Quickſilver led him to an Adminiſtration of it in almoſt all Diſeaſes. And indeed our *Engliſh* Ladies were ſo infatuated with the ſalutiferous Virtues of this Mineral, that they uſed to drink it in their Tea, inſomuch that they frequently, though involuntarily, droſt the ſmall Particles of it all round the Floor upon a Ball-night, ſo that one would really think there had been a Parcel of ſmall ſparkling Diamonds thrown about the Room.

An Obſervation on the Ladies drinking Quickſilver.

I cannot ſay but that Gunſhot-Wounds are moſt ſubject to gangrene and mortify, by Reaſon of the Contuſion, at the ſame Time the Wound is receiv'd. Therefore pretty large Scarifications are moſt certainly proper in Gunſhot-Wounds, to promote the natural Heat and genial Warmth of the Part.

Gun-ſhot-Wounds ſubject to mortify. Scarification proper.

I remember to have ſeen a ſmall Piece publiſhed by Mr. *Ruſſworth*, a Surgeon lately dead as I remember at *Northampton*, in which Book he tells us of the great Uſefulneſs of Jeſuits Bark in ſtopping Mortifications, and upon ſuch Recommendation I made Trial of it, and choſe the Bark as good as I could.

The firſt was upon a young Man who had the Humeral Artery wounded upon unſkilful Bleeding by an Apothecary's Apprentice, ſo that his lower Arm began to mortify, and the Mortification, without yielding in the leaſt to the Bark, ſpread up to his Body, down his Side, and killed him. The Boy to oblige his ſilly Mother would not conſent to loſe his Arm, or he might have been yet living. Nor could the Operation for the Aneuriſm be performed, by Reaſon I was ſatisfied it was the main Body of the Humeral Artery which was wounded. Therefore, if this had been tied up, all the lower Arm muſt have wanted a Supply of Blood. But I own I was not ſatisfied from this Trial, that the Bark was of no Service in ſtopping Mortifications; for I was not ſo ſtupid to imagine that it could make the poor Boy a new Artery: No, I think the Bark

Jeſuit's Bark good to ſtop Mortification.

in

this Case had not a fair Chance to grapple with the Distemper: Therefore I made use of it in more easy and slight Cases, where the Part seem'd to threaten a Gangrene, or Mortification, from a Decay of Spirits, or for want of natural Heat, as I said before. For if an inflamed Tumour too suddenly grows cold, then this Drug no doubt yields Relief, by mechanically promoting the Firmness and Elasticity of all the Animal Fibres: And therefore those Horses which happen to be wounded in Engagements, it may not be improper (if they are worth rearing) to give them a Pound of Bark by Ounces twice a Day, mixed with Beer or the like, and a little Venice Treacle along with it.

CHAP. XXXVII.

Of Venemous Bites, as of the Mad Dog, &c. in Horses.

I Do not know any Thing more dangerous in *England* than the Bite of a Mad Dog or Viper, but very few Misfortunes (thank God) happen from the Latter, though there are many from the Former. And besides, the Bite of our Viper is nothing like so deadly a Bite, as those in hotter Countries, *(viz) Italy*, &c.

Before I proceed to the Cure of the Bite of a Mad-Dog, it may not be improper to give some Account how a Person may know when a Dog is really mad; for I am satisfied many poor Curs are said to be so, after they have been abused and tumbled in the Dirt, when in Fact the People that follow to destroy them are the madder of the two; and whomsoever such innocent Cur happens to bite in his own Defence must be deem'd forsooth bit by a Mad-Dog, and thereupon travels Scores of Miles with his wise Head, to apply for Relief to some ignorant Fellow as silly as himself, only it is rumour'd

The Signs of Madness in a Dog.

mour'd he has got a *Noſtrum* or never-failing Secret for the Cure of theſe venomous Bites. And upon taking ſuch Pill, Powder, Bolus, or Draught, the deluded Traveller returns with *Mens Sana in Corpore Sano*; although 'tis ten, nay I may ſay, a hundred to one, that ſuch Dog was not really mad, or that if he were ſo, the *Saliva* or Slaver did not get into the Blood of the Perſon, who fancied himſelf bit: and if it did not, I am ſure no Evil Accident would follow upon ſuch Bite. Yet ſuch People ſay that *if it do no Good, it can do no Harm*; true, but then why ſhould a Pack of ignorant Fellows have the Credit of curing theſe venomous Bites with their *Noſtrums* and Nonſenſe, when the Operation of the very Poiſon itſelf, as well as the Methods by which it is prevented from doing Harm, are truly mechanical, as has been ſufficiently ſhewn by Dr. *Mead* in his Eſſay on Poiſons.

The firſt Symptom of Madneſs.

The firſt Symptoms of Madneſs in moſt Animals, is an unuſual Trepidation or Trembling.

A true Deſcription of a Mad Dog.

The *Diagnoſtick* Signs of a Dog truly mad, are Hunger and Thirſt, yet he will not eat or drink, except when the Diſtemper is in its firſt Stage. His Eyes are fierce and flaming; he hangs down his Ears, thruſts out his Tongue; froths much at the Mouth, barks at his Shadow, runs along ſad and anxious, often breathes as if tired with running, carries his Tail bent inwards without any Difference; he runs againſt all he meets with Force and bites, running in a haſty and uncertain Courſe.

N. B. All Dogs that are well have ſo much Senſe of the Danger, that they fly away both at the Sight and Barking of one that is mad.

Mr. *Gibſon*'s Account of the Bite of a Mad Dog.

Mr. *Gibſon* tells us, "that the Biting of a Mad "Dog is not ſo poiſonous as ſuppoſed, but only as "thoſe Creatures are apt to ſtrike their Jaws with "great Force, whereby they ſometimes wound and "bruiſe the Sinews and nervous Parts; but that "the Bite of an Adder is plainly venomous and "deadly from many Inſtances both among Men and "Brutes."

Now

Now for my Part I cannot see what should lead his Author into a Belief that the Bite of a Mad-Dog is not so poisonous as we may imagine, seeing daily Experience evinces that it is so, unless it is, because the Wound from the Bite of this Creature when mad, is as easily healed as any other Wound can be. And really the Bite of a Mad-Dog has this particular and wonderful in it, to wit, that sometimes the Mischief is not discovered 'till the Occasion of the Cause is quite forgot, as the justly celebrated Dr. *Mead* observes.

The Author differs in Opinion with Mr. *Gibson*.

It often happens that the Poison shews itself two or six Months, nay sometimes a whole Year or longer after the Bite; and I have been well inform'd from very credible People, that a Carrier between *Bernard Castle* and *Kirkby Lonsdale* in *Westmorland*, went mad three Years after the Bite without any new Aggravation, and died howling and barking, with all the Symptoms of this so direful Malady upon him. So that really we cannot tell when we are quite safe. However, if after forty Days the Creature bit continues well without any of the common Symptoms of Madness upon him, we may reasonably conclude the greatest Part of the Danger to be over.

The Venom commonly shews itself in forty Days.

I believe, by Experience, and our own Observation, that the *Saliva* or Slaver of the Dog is chiefly initiated, and that the Poison is only in that, for it is that which usually affects Wounds. Yet we have some authentic Accounts that the Mischief may be communicated without a Wound. Particularly we see in the *Philosophical Transactions* an Account of two Men affected with Madness from touching of the *Saliva* or Slaver of a Mad Dog, without any Wound or Bite given. Though I am of Opinion, that these Men have had some sore Places upon their Hands when they touched the *Saliva*, and that the same has affected them by penetrating into such sore Places, otherwise it is scarce possible the Thing should come to pass: For if the outermost Skin, commonly

An Account of two Men affected from the Slaver of a Mad Dog without a Wound.

commonly called the *Scarf-skin*, be found and whole, it is of such a Nature, that it will not easily admit any Thing to pass through it inwardly, as may be seen every Day in the Application of *Epispastick* or Blister-Plaister, which seldom cause the Strangury, unless some of the Flies be put on the Melilot Plaister after the outermost Skin is removed. And then indeed the Ends of the Blood Vessels, *&c.* are unguarded, and the small Particles of Flies enter, and so stimulate the Part, that very frequently a great Heat of Urine and Strangury are occasioned, which would continue longer if the Party did not drink plentifully of small Liquors to wash off the Flies by the Kidneys, *&c.*

Two Boys affected with Madness only by handling a Wound in a Dog's Head that had been bit by a Mad-Dog.

We have likewise an Account of two Boys in *Ireland*, who were in like Manner affected, only by handling of a Wound in the Head of a Dog bit by another Mad-Dog: Though, as I said before, we are not sure but these Lads might have little Cuts or Sores upon their Fingers, by which the Venom might enter, and so get into the Mass of Blood.

Time will not permit me to run Divisions upon each of the Symptoms attending the Bite of a Mad Dog, nor to tell the different Prescriptions of eminent Men upon the Subject. Therefore I shall content myself with setting down the most effectual Method yet known for the Cure.

The Cure.

It is much doubted by the most ingenious Men whether or no there is any Cure for the Bite of a Mad-Dog when the Venom has once taken Root but that the same may be hinder'd from communicating with the Mass of Blood, if the Part affected be managed as it ought, no one should make the least Scruple. And in order to this End, let the Wound as soon as possible be cauterized with a hot Iron; and as *Galen* has recommended, let a Circle be drawn with such Iron round the Wound pretty deep, then wash the Sore with the following Mixture.

Take

Take good Muſtard Seed in Powder, two Ounces: White Wine Vinegar, one Pint: Mix and digeſt warm and cloſe ſtopp'd for an Hour or two, then ſtrain and keep for Uſe. Mixture to waſh the Bite of a Mad-Dog.

This Mixture or Infuſion ſhould be applied as warm as 'tis poſſible to be borne: After which, let the Wound be dreſs'd with ſome of the freſheſt *Egyptiacum Ointment* you can get; then cover it with pledgets of *Tow*, and bind it up according to Art. This ſhould be done twice a Day for ſome Time, I mean the Dreſſing with the Ointment; for once is enough to cauterize when ſuch Thing can be done with Safety. But if the Bite be amongſt the Sinews or Tendons, I am apprehenſive giving the Fire might contract them ſo as to lame the Horſe, unleſs the Operation was performed in an eaſy Manner by a ſmall pointed Iron, and only burning the Wound, without any Circle round afterwards, as obſerved before.

All that we have to do is to break, blunt, or ſheathe the pointed *Spiculæ* or little floating Daggers which are contain'd in the Venom infuſed into the Wound. And this may be done by Fire immidiately apply'd, as alſo by *Viper's Fat*, which is allow'd the moſt penetrating Kind of all others; for it is certain the Viper-Catchers have a Way of ſmearing over their Hands with the Fat of the Viper, and then they fear no Colours, but boldly handle them as ſoon as their little Dogs make a Set at them, in the Manner of Setting-Dogs, which is the Way they take Vipers both here and in *Italy*; for this fat ſo ſheathes and invelopes the pointed *Spiculæ*, that they are not able to work their Way through the Fibres of the Body, they are ſo entangled by it.

Next to Cauterizing is keeping open the Wound a long while, at leaſt forty Days, by making a Kind of Iſſue of it with a Pea, or the Root of *Florence Orrice* cut into that Shape, and rubb'd over with the following Ointment. Wound to be kept open forty Days.

Take

An Ointment.

Take the common green Ointment, prescribed Page 283, two Ounces; Cantharides or Spanish Flies in Powder, three Drachms. Mix.

Immersion in Salt Water necessary.

During these Things, whether the Creature that is bitten by Man or Beast, it is absolutely necessary to immerse them in Salt-Water; but if that cannot conveniently be come at, any cold Spring may do, 'till you can arrive at the Sea-Water. The deeper the Creature is plunged over Head the more effectual will it prove; for it is not altogether the Coldness, but the Weight of the Fluid which presses upon the Body in Immersion, that does the Business. And it is therefore, that Salt Water in many Cases is more beneficial than cold Bathing, by reason it is much heavier. But as to the Number of Times proper to dip in the Salt Water, I am of Opinion Ten Times are better than Nine, though the first be an even and the latter an odd Number.

The Secret some Time ago in the News no other than *Bates*'s *Decoctum ad Morsum Canis Rabidi.*

A great deal of Stir has been made in the News several Times, with an Account of a pretended Secret for the Cure of the *Bite* of a *Mad Dog*. And I knew some Gentlemen who esteem'd the Thing (before it came in the News) as a grand *Orvietan* or Counter-Poison; whereas the Composition is in *Bates*'s *Dispensatory*, under the Title of *Decoctum ad Morsum Canis Rabidi*. However, to save the Reader the Trouble of looking into that Book, I shall here write the Thing down, that those who judge fit may try its Efficacy; and I must own the same is well enough calculated for the intended Purposes.

A Decoction for the Bite of a mad Dog.

Take Tops of Rue, six Ounces; Filings of Tin London Treacle, and Garlick, of each four Ounces clear Ale, four Pounds or two Quarts: Boil to the Consumption of one Half, and digest or let it stand warm a while, then strain it. Dose to a Man, six Spoonfuls twice a Day for nine Days together, and apply the Magma (or Herbs after they are squeezed out of the Liquor) to the Wound.

You

You see Dr. *Bates* was, like the rest of the 'orld, infatuated with an odd Number, or else he is order'd it so to be taken in Compliance with the d Use and Custom, which I must own I shall not ndertake to alter; though I hope I am at Liberty use my Senses and judge reasonably, let old Use d Custom do as they please.

There is one Mr. *Hill* of *Ormeskirk* in *Lanca-ire*, who pretends to a rare Secret for the Cure of *enomous Bites*, particularly those of a *mad Dog*, *ad Cat*, &c. and I am told, his Medicine is in orm of a Powder; though I can't say it was ever etended to cure any one when the Symptoms of adness had really seized them, notwithstanding had the Curiosity to make a strict Enquiry of its ccess. But I was told, that the late Earl of *Der-* had most of his Hounds bit by a Mad-Dog: And *Knowsley*, the present Seat of that Ancient and oble Family, is in the Neighbourhood of *Ormes-rk*, his Lordship thought fit to try Mr. *Hill*'s Se-et. An equal Number of them took the Powder, nd as many more, equally affected as far as could e judged, took the Decoction of *Rue*, *Garlick*, &c. aforesaid, by the Management and Direction of Ir. *Serjeant*, the then Cook at *Knowsley*, from hom I had the Account. In fine, Five out of ine of Mr. *Hill*'s died, and those under the Cook's are all recover'd. But then it may be objected, at Mr. *Hill*'s Secret does not operate upon *Men* d *Dogs* in the same Manner; but such Objection ould, to any Man of Sense, look very absurd and diculous, seeing, as I have often hinted, nothing more sure than that the Operation of Medicine is echanical, and that therefore it will act by the ne known Powers, let the Subject be Human or ute Creature. Dr. *Lyster* has treated very learn-y upon these venomous Bites, &c.

Mr. *Hill*'s Secret for the Bite of a mad Dog not always successful.

Sir *William Hope*, Author of *The Complete Horse-n or Perfect Farrier*, has here and there set down nething in the curative Way worth observing; but

but in general he is very insipid and insignificant as to this Particular: And in treating of venomous Bites he has the following Observation, *viz.*

"There are certain venomous Creatures resembling Mice, which breed in rotten Straw, the Bitings of which are fatal to Horses and Dogs and when a Cat eats them, she dies in a kind of Consumption. If they bite a Horse in the Pastern or Fetlock joint, the Part swells, extending the Tumour to the Hough, Cods, and Lunda ment; and, without timely Assistance, the Horse dies in forty-eight Hours. If they bite the Bell of a Horse, the Tumour either rises towards the Throat, or extends to the Sheath, and quickly kills him."

Thus far Sir *William Hope*, tho' I can't say ever knew any Thing happen to a Horse, wherein one might suppose him bit by one of these Mice nor do I find, that any of the ancient Authors mention it. Yet I have had Cats, that have died frequently in a Kind of lingering Way, when indeed might be called Consumptive; and though young wasted, and refused Food to the End, without being able to guess at the Distemper. But I always supposed they might have eaten some Mouse or Rat that had taken *Rat's Bane*, *&c.* and got so much of that Poison as might make them linger and die though not very hastily. But I might be mistaken and the Cats may have eaten some of Sir *William Hope*'s Mice. Therefore take his Receipt for the Cure of this Sort of Bite.

Sir *William Hope*'s Cure for the Bite of venomous Mice.

"If the Bite be in the Leg, tye a Ribbon or Garter of the Breadth of an Inch above the Swelling to stop its Progress, and beat the swollen Part with a Branch of Gooseberry Bush, 'till be all over bloody: Then chafe it with a large Quantity of *Orvietan*." (I do not know which means, unless that in *Bates*'s and *Quincy*'s *Dispensatories* under the Title of *Electuarium Orvietanum* "or *Venice Treacle*, exhibiting inwardly at

sa

" ſame Time an Ounce of either the *Orvietan* or " *Venice Treacle* in Wine; the next Day repeat " again and exhibit half an Ounce of the ſame " Remedy. After which untie the Garter, chafe " the Leg with Spirit of Wine, ſew a Cloth dipt in " the ſame Spirit about the Swelling, and after " that rub the Part with the *Duke*'s *Ointment* to " aſſwage the Swelling."

Vipers Fat excellent for the Cure of venomous Bites.

I have look'd over the Ointment which he is pleaſed to ſtile the *Duke*'s *Ointment*, and find it compounded of Linſeed-Oil, Flowers of Sulphur, and Hog's Lard, or Hog's Greaſe, which latter Sort Sir *William* fancies muſt be beſt; though in the main there is ſcarce any Difference in the Effects of the Fat of Animals, I mean Quadrupedes; but Viper's Fat is of all others the moſt penetrating, and what no large Family ſhould be without, ſeeing it has moſt Right to claim ſomething extraordinary in curing not only the Viperine Poiſon inflicted by a Bite, but likewiſe all other venomous Bites; for there is no manner of Diſpute to be made but the deadly Miſchiefs following ſuch Bites, proceed from the ſmall and pointed *Spiculæ* contained in the Juices or *Saliva* in the Mouth. And of this any one may be convinced upon looking at the Venom of ſeveral noxious Animals with a Microſcope, when the ſame is floating upon a *China* Saucer or the like.

Dr. *Mead* enraged a Viper, and cauſed it to bite a young Dog in the Noſe ſo hard, that both the Teeth were ſtruck deep in: He howled bitterly, and the Part began to ſwell; but upon Application of the *Axungia* or Fat of the Viper, which was ready at Hand, he was very well the next Day: But leaſt it might be thought that the Dog's licking his Noſe might cure him, he was bit a ſecond Time in the Tongue, and upon forbearing the Remedy, he died in four or five Hours after the Bite. The ſame Trial was made with like Succeſs upon other Dogs. But for a full and truly ſatisfactory Account of Poiſons, I muſt refer the Reader to the Doctor's Eſſay on that

Subject. And I must esteem those very unhappy who have not seen that excellent Piece.

CHAP. XXXVIII.

Of Fistula's, old Wounds, &c.

The Signs. A *Fistula* is any Kind of Pipe: But its common Use is to signify Ulcers that lie deep, and ooze out their Matter thro' long, narrow, winding Passages. In which Cases the Bones are frequently affected with Rottenness or Blackness, and the extreme Parts or Lips of the Wound, as well as many Times the Inside of it, are callous, horny, and hard. These Wounds are commonly narrower at the Mouth than at the Bottom, and send forth thin Matter commonly called *Ichor*.

The Cause. A *Fistula* is often occasion'd from the ill Healing of a Wound; sometimes it comes from a Crush from the Saddle; and, as I have observed, these troublesome Ulcers are most commonly in the Withers: And if they pass down between the Shoulder-Blades and Ribs, as is often the Case, they are very difficult of Cure, by reason there is no coming at the bottom of the Wound.

The Cure. The first Thing to be done, is to search or probe the Wound with a leaden Probe that will easily bend, or with a Piece of small Wax-Candle; and, if the *Sinus* or Cavity lie in any Part that can with Safety be open'd, it should be done the whole Length of it by the Help of a long, small-pointed Penknife or *Bistory*, which should be guided along with a small Piece of Iron that is channell'd on one Side, and of a fit Length. After the Hollowness or Cavity is quite open, you must feel with your Finger up and down for callous, horny, and hard Substances; for the *Ichorous* Discharge from these old Wounds is of such a corrosive Quality, that it causes the *Sinus* or Cavity to become horny and hard in order to defend the

the Veſſels, &c. from the farther Corroſion of it, and in this Particular it is like a Shield of Defence. But all this callous Subſtance muſt be taken away either by the Knife, actual, or potential Cautery; tho' I take the firſt to be the quickeſt and beſt Method, if it can be done; yet in many Caſes we are obliged to burn away the Calloſity with the actual Cautery; and even where this cannot be comply'd with, ſome corroſive Powder or the like is made uſe of. Therefore, firſt deſtroy the callous or horny Subſtance to the very Bottom of the Wound; then apply the following Water and unguent.

All the callous Subſtance to be conſumed before the Fiſtula can be cured.

Take a Pint of Lime-Water made very ſtrong; and put to it, of corroſive Sublimate, two Drachms; ſhir theſe frequently together for ſome Days; then pour off what is clear, and add Spirit of Wine, four Ounces. Mix.

The Fiſtula Water.

With this Water the Wound may, with a Bunch of Feathers, be waſh'd for a Week at the Beginning: But its Uſe ſhould not be continued too long together; for though 'tis a good Cleanſer of old Wounds, yet after all the Hardneſs is eaten away (as 'tis call'd,) proper Ointments are ſufficient. Therefore you need only now and then waſh the Sore with it to hinder fungous or proud Fleſh from generating; this Water being a great Enemy to any ſuch ſoft Subſtances, and, I dare ſay, would cure what the Cow-Leeches term the *Foul* in a Cow's Foot, by uſing it as they do the Oil of Vitriol, which, in my Thoughts, is not near ſo ſafe.

I hope it will be remember'd, that I directed the Opening of Wounds according to the Direction of the animal Fibres, eſpecially where there is not a good deal of muſcular Fleſh: But where this is in Plenty, it cannot do much Harm if the *Sinus* or Cavity be open'd a little croſs-wiſe; for the ſmaller kind of Fibres will unite well enough to perform the Action of the Muſcles; but no ſuch Thing can

To cure the Foul in a Cow's Foot.

be done where the Cavity runs amongſt the Tendons or extreme Parts of the Muſcles, unleſs the ſame lie only Skin-deep, and then indeed it may be laid open as the Operator finds it moſt needful.

When all is done which I have directed, let the Wound be dreſs'd once or twice a Day (according to the Quantity of Matter it diſcharges) with the following Unguent.

Ointment for a Fiſtula.

Take common Tar, two Pounds; common Turpentine, half a Pound; Honey, ſix Ounces; Yelks of Eggs, Number ten: Melt the Tar, Turpentine, and Honey together, and when they have ſtood 'till they are only Milk-warm, ſtir in an Ounce of the beſt French *Verdigreaſe in fine Powder, and mix it ſo long that it cannot ſink down to the Bottom.*

If you would have it a little more ſtiff or of a thicker Conſiſtence, you may add half a Pint of Wheat-Flour; but, in my Thoughts, 'tis better to be thin; and then with a few Feathers tied together the whole Wound may be anointed with the Ointment very warm, as often as there is Occaſion. And *laſtly*, cover with Tow and Pledgets.

A Caſe of a Fiſtula in the Withers cured.

I remember to have had a good old Horſe, which I much valued for his paſt Services: He had a large and hard Tumour or Swelling upon his Withers, which is the Joining of the Shoulder-Blades before the Saddle. It continued for ſome Months, without tending in the leaſt to ſuppurate, but remain'd fix'd and hard, and at laſt grew ſo big, and contracted the large Back-Sinew of his Neck ſo much, that he could ſcarcely ſtoop to eat Graſs. I then apply'd to a Farrier, who had had a deal of Experience, to know what he thought of the Matter tho' I did not deſign religiouſly to purſue his Method unleſs I judged it reaſonable. Upon handling the Tumour, he told me, in a very honeſt Way that I had better knock the Horſe o'th' Head, and diſpatch him at once, rather than be at Expence

and

and Trouble with him to no Manner of Purpoſe; ſo that he thought him abſolutely incurable, the Tumour was ſo large and of ſuch a hard and horny Nature: And farther he ſaid, he had Reaſon to believe the ſame a Fiſtula, which penetrated deep between the Shoulder-Blades and Ribs.

This Sentence I thought a very harſh one paſs'd on my old Servant, by one of the better Sort of Practiſers in his Way. However, I told him, if he would operate with his Knife, I would direct it; ſeeing he thought the Horſe fit for nothing but trying Experiments upon. This he very readily conſented to, for it was my old Friend the Farrier (whom I have often mentioned) that wrought for me, and I for him, ſo that We Doctors never took any Fees from one another, as the facetious and lucky Prognoſticator Dr. *Radcliffe* merrily expreſs'd himſelf to an Operator of this Kind. In ſhort, we caſt the poor Creature, and after ſecuring his Feet, *&c.* I made the Farrier cut a Hat's Crown full of horny and hard Fleſh from about the Withers; inſomuch that my Friend cried out to ſtop, or we ſhould cut the *Fix-Fax* of the Neck (as he call'd it) which is the large and ſtrong Tendon that ſupports the Head. This I thought a good Obſervation of the Fellow, who had (as every one ſhould) in his Mind the Parts concern'd in the Operation: But I bid him proceed, for that we were yet ſafe enough from what he apprehended. When he had cut as much of the callous Subſtance away as I judged neceſſary, I ordered him to ſearch the Wound for a Cavity or hollow Part, which he uſually did by a kind of crooked Horn like the Antler or Branch of a Stag, whereby he diſcovered a Fiſtula which ſeem'd to run along towards the Shoulder-Blades, though I was in Hopes it was not very deep for Reaſons too tedious to enumerate. This done, the next Thing to be conſider'd was the ſound Healing of the Wound, and at as eaſy an Expence as might be, leſt the Cure ſhould be worſe than the Diſeaſe; for he was then a

of ſmall Value, and if kept at Hay, *&c.* would ſoon have eat his Head off, as the common Saying is. I therefore order'd him to Graſs, (for it was in Spring Time,) and that in ſuch a Paſture where he ſhould have ſomething to bite at; otherwiſe the Healing of the Wound would be hindered by his continual Stooping and Labouring for his Living. The Wound was dreſs'd twice a Day with the Ointment as above, only a little Soot was added to it to make it more detergent, and alſo more offenſive to the Flies, *&c.* After the Ointment, we cover'd the Shoulders with Tow, and a Piece of thin Sacking over all faſten'd behind his Shoulders under his Chelt and before his Breaſt; and in this Manner he was cured in a reaſonable Time, doing much good Service afterwards.

I kept my Friend the Farrier for ſome Time in Ignorance and Suſpence about the Ointment, but rather than I would loſe his Cuſtom, tho' he gave me no Fees, I told him how to prepare it, which was as before directed.

Abſterſive and cleanſing Applications preferable to unctuous or oily.

I hope I need not enter into a Diſpute, whether unctuous or oily, or cleanſing and abſterſive Applications are moſt proper for the Cure of Fiſtulous Ulcers, old Wounds, *&c.* ſeeing I have ſufficiently ſhewn in my Notes upon Captain *Burdon*'s *Pocket Farrier*, that the latter are much preferable, and the former to be rejected, as ſuch Things breed proud Fleſh, *&c.* Neither is Syringing any kind of Liquors, or paſſing a Rope or Hair Rowel thro' the *Sinus* or Cavity, in order to drain off the Humours, of any Avail in theſe Caſes; and there are very few Inſtances wherein the Uſe of Tents are not prejudicial; for any or all of theſe much oftner create than cure a Fiſtula. Therefore the moſt ready and effectual Method is the Knife and Fire, both which agree better with the Nature of a Horſe's Fleſh than Injections, Rowels, or Tents.

The Uſe of Tents pernicious; Knife and Fire better.

Giving the Fire, of

That giving the Fire is of the greateſt Service in many Caſes, both in Human and Brute Creatures, no

no one need dispute; being we often find that the *Sciatica* or Hip-Gout, and long settled Pains and Lameness in the Joints, &c. of the latter are often removed by it, when given to the Purpose; or in other Words, when the pain'd Parts are cauterized as deep as their Situation will allow, and according to the Urgency of Symtoms, both which must guide the Hand of the Operator.

great Service to both human and brute Creatures.

I could recount many obstinate Pains and Aches in the Joints, &c. of Human Bodies, which have been removed and often quite cured by the Use of the actual Cautery. And I once knew an empirical Fellow that travell'd the Country, making it his Business to remove such Complaints, which he mostly did by applying Caustics to so great a Degree, that I found he put on Ten at a Time to cure a certain Landlady at *Otley* in *Yorkshire* of an obstinate Sciatica and Rheumatism, which he did effectually; for when I saw her she had been three Years well and free from her Pains, and said she hoped to continue so, tho' her Issues from the Caustics were all dried up.

The *Arabians* were very sensible of the great Usefulness of the actual Cautery in many Cases, particularly *Alsaharavius*, who as the late ingenious Dr. *Friend* tells us, is the same with *Albucasis*, mentions fifty Distempers where it may be of Service. And *Prosper Alpinus* remarks, that in his Time Ustion or Burning was the Remedy most used, and was most depended on for inveterate Pains and Aches amongst the *Egyptian* and *Arabian* Horsemen, who, living chiefly in Tents and Deserts, were no doubt very liable to vagous and wandering Pains, &c. And really I am surprized the actual Cautery is not more in Use at this Day, seeing there are such good Reasons for it. But, when Physicians and Surgeons are so timorous, either for the present Ease of their Patients, or in Diffidence to their own Judgments, we must expect several Cures will be perform'd by Empiricks and Quacks, who venture upon rougher,

yet more effectual Means. Witneſs *Ward*'s *Pill* and *Drop*, which is a ſingular Inſtance of this Truth: For the ſame being Preparations from Antimony, ſeveral very noble Feats are performed by them, eſpecially in diſlodging Gouts and other Humours which obſtruct the Glands and ſmaller Paſſages. And tho' we well know why the Pill and Drop effect this and that Cure, yet, forſooth, becauſe Antimonial Preparations are accounted rough and harſh in their Operation, they muſt be excluded the Shops, to oblige the preſent delicate Age, who rather chooſe what they ignorantly ſtile a *ſafe Man*, than one who preſcribes more effectual Medicines, and moves upon a more certain Baſis, and much better Philoſophy.

I ſee no Harm in Firing or Cauterizing young Colts, that are ſlender legg'd, upon the back Sinews, before they are lamed, and abſolutely require ſuch Operation. For it was a Practice amongſt the *Eaſtern Bowmen*, before the Uſe of Fire-Arms to do the like upon the brawny Part of the Arms of moſt of their Youth, that they might become ſtronger, and ſhoot their Arrows with more Force.

I need not farther enlarge upon the Manner of giving the Fire, ſeeing it is ſufficiently known and practiſed by Farriers: Therefore I muſt now proceed to *Rowelling*, *&c.*

CHAP. XXXIX.

Of Rowelling Horſes.

I ONCE thought not to have made a particular Chapter upon *Rowelling*, ſeeing I have in my Notes upon *Burdon* given my Reaſons when the ſame is uſeful, and when otherwiſe; but leſt that ſmall Piece may not be in the Hands of every Subſcriber to this Work, or if it were, it is incorrect thro' the Negligence of the *Iriſh* Printer; I ſay, for theſe

theſe Reaſons, I beg to be heard a Word or two upon the Subject.

And *firſt*, tho' Rowelling be the moſt common Thing amongſt Farriers, yet I never met with one could give me any ſatisfactory Account of the Uſe or Abuſe of ſuch Drains. But they all in general tell you, that a Rowel is to draw off the bad or corrupt Humours from the Blood; ſo that Fat or Lean, Lame in the Hoof, or Lame in the Shoulder, Hide-bound, or Hoof-bound, Rowelling is the Cure, according to their Way of Reaſon.

Rowelling its Uſe.

Rowelling is an artificial Vent which is made between the Skin and Fleſh, in order to make Revulſion or Derivation from any Part that is weaken'd or relaxed by old obſtinate Obſtructions. And for this Purpoſe, it is uſeful in many of the ſame Intentions as the actual Cautery or Firing treated of in the preceding Chapter.

Rowelling when proper.

It is good in all Aches and Pains, cold phlegmatick Swellings, and ſometimes Lameneſs, and Infirmities of the Legs, it alſo gives Relief where there is a Fullneſs and Redundancy of Humours, and in Defluctions of Rheum upon the Eyes, *&c.* But it is prejudicial to lean hide-bound Horſes, which cannot bear any ſuch Diſcharge. And, as I ſaid in my Notes upon *Burdon*, the Horſe might as well, nay better, loſe as much Blood every Day, as he does Matter by the Rowel: For it is certainly, and with as much Propriety of Language called *Cruor*, as that in the Veins is called *Sanguis*, barring the Colour, which makes no very eſſential Difference. And I am very much of Opinion, that ſeveral Cures are wholly attributed to Rowelling, when Reſt and Patience are the principal Inſtruments or Agents that perform it. However, *Qui vult decipi, decipiatur.*

Reſt and Patience very often perform the Cure, tho' it is attributed to other Things.

CHAP. XL.

Of the Lampas, Barbs, Wolves-Teeth, Splents, Spavins, and Ring-Bones.

The Signs of the Lampas.

THE *Lampas*, by the *Farriers* defined a fleshy Lump or Excrescence in the Roof of the Mouth, [illegible] opening the Horse's Mouth, you may perceive that the Roof rises more or less above the Teeth.

The Cure.

This Disorder (as 'tis call'd) is common to young Horses, the Roof of their Mouth not being of so harsh and dry a Nature as those of old Horses. And, tho' 'tis said, that the Flesh will rise so high above the Teeth that it will even scare him from his Oats, &c. yet I am still of Opinion that Nature is not often luxuriant above Measure in this Particular, as the common Farriers, Blacksmiths, &c. would make us believe. Nor is there, in my Thoughts, so often need of cutting out the Lampas. The *French* cure it by rubbing the luxuriant Flesh with a hot roasted Onion wrap'd in a Clout; but for my Part, I cannot see of what Benefit such Application can be to destroy or waste the Lampas in a Horse's Mouth.

I have had many young Horses, yet never any cut for the Lampas, tho' the Roofs of their Mouths were as fleshy as other People's Horses; and I never could see that it did any real Service to cut them out; so that it is plaguing and tormenting the poor Creature to no Purpose, and satisfying the ignorant Farrier, and more ignorant Master or Owner. Besides this, it makes the Horse bear a Mark or Testimony of old Age before his Time; an old Horse's Mouth being naturally harsh and thin of Flesh upon the Roof: Therefore 'tis well we have so many Marks, which should all or most of them correspond for our Satisfaction, to signify to us a Horse's Age; otherwise we might often be obliged to keep those,

thoſe, which we had moſt Mind to part with, by Reaſon *Chapmen, who meaſure other Corn by their own Buſhel,* would not believe us when we ſaid he had been cut for the Lampas, and ſo would deem him an aged Horſe.

Barbs are ſmall Excreſcences under the Tongue, which may be ſeen by drawing it aſide a little, and are cured by Cutting them off as cloſe as may be; but as to rubbing the Place with Salt afterwards, there is not much Reaſon or Occaſion for it, tho' 'tis commonly uſed for this and many other Ailments, wherein it cannot be ſaid to ſhare any Thing of the Cure; therefore I think a Spunge, or Rag dipt in Brandy or Spirit of Wine is better, frequently to waſh the Sores withal after cutting off the Barbe. Barbs.

A Horſe is ſaid to have *Wolve's Teeth,* when his Teeth grow either Outwards or Inwards ſo, that their Points prick and wound either the Tongue, or Gums when he eats. Horſes in their Decline of Age are moſt ſubject to this Infirmity, by Reaſon the Teeth grow long, or in other Words, they are not ſo much cover'd with Fleſh at the Roots, as a young Horſe's. And when the upper overpaſs the under Teeth, in a great Degree, 'tis then he may have what the Farriers call *Wolve's-Teeth.* Wolve's-Teeth.

If you would remedy this Evil, you may either chip off the ſuperfluous Parts of the Teeth with a Chizzel and Mallet, or, which is better tho' longer in performing, file them down firſt with a rough, then with a ſmooth File, till ſuch Time as you have waſted them ſufficiently. After which 'tis directed by Farriers to waſh the Mouth with Vinegar and Salt; though warm, or even cold Water is as effectual in removing the ſmall Pieces of Bone, and that is all which is required. The Cure.

Splents, Oſslets, Spavins, and Ring-bones, moſtly owe their Formation to one and the ſame Cauſe, to wit, Bruiſes or hard Exerciſe, and ſome have it from their Sire or Dam; yet there is no general Splents, Spavins, Oſslets, and Ring-Bones, their Cauſe.

Rule without an Except on. However, tho' I told the World in my *Notes upon Bardon*, that Horſes troubled with Spavins, Ring-bones, *&c.* might get ſound Colts, yet I would not have ſuch Expreſſion conſtrued in too large a Senſe; for as thoſe Notes were writ in haſte, and the Subject couched in as few Words as poſſible, it muſt not be expected that every Particular is touched upon. Therefore I muſt now declare, that altho' ſuch Horſes may beget ſound Colts, yet I would not put a Mare to either a blind Horſe, (eſpecially if he went Blind without Accident,) or to one which had a Spavin or Ring-bone. But as to Splents, Oſſlets, *&c.* I do not call the Horſe unſound though troubled with them, for theſe moſtly wear off by the Time

A Horſe cannot be called unſound tho' he have Splents, provided he do not halt.

Splents. Every one knows that Splents are hard Excreſcences which grow upon the Shank-bones of Horſes, and they are more or leſs dangerous as they are big or little, but there are few young ones without ſome.

Oſſlets. Oſſlets are of the ſame Nature with Splents, ſituate near the Knee on the Inſide, and are ſaid to grow out of a Gummy Subſtance about the Knee.

Oſſlets are only diſtinguiſhable from the Knee itſelf by being a little lower. And theſe, as well as Ring-bones, Bone-ſpavins, *&c.* before they become of too hard a Nature, may be made to yield to Remedies.

The Cure. The Cure of all theſe bony Excreſcences, is, in my Thoughts, *firſt*, to beat them with a bleeding Stick for ſome Time; then prick or wound the Part with a ſmall Bodkin made hot, and rub in ſome of the beſt Oil of Origany, after which clap on the following Charge.

Charge for a Ring-bone, Splent, Oſſet, or Spavin. *Take Æthiops Mineral, one Ounce; common Turpentine, ſix Drachms; Burgundy Pitch, one Ounce; Spaniſh Flies in Powder, two Drachms; Gum Euphorbium, two Drachms; Corroſive Sublimate in Powder, half a Drachm. Mix.* Shave away the Hair,

Hair, and apply this warm and thick ſpread either upon Tow, or Leather, and bind it on for ſome Time till it offers to come off eaſily, after which heal the Wound with the Green Ointment, (*page* 283.) Some give the Fire in theſe Caſes with Succeſs; but I believe the Method I have ſet down has cured more than any other, and if it fail I think Firing will not work a Cure; nor would it do before, if the Excreſcence be of ſuch Hardneſs, as that it will not yield to the above Application, *&c.*

It is worth obſerving, that theſe Kinds of bony Excreſcences muſt either be nipt in the Bud, or they will ſoon become of ſuch Firmneſs and Solidity, that they will not yield to one Thing or other; and that Rubbing and Beating them with a Stick of any ſort of Wood, tho' ſome adviſe *Hazle* as the beſt, the hard Subſtance is brought ſoft as Jelly, and will therefore more eaſily be diſperſed or diſſolved by the Plaiſter, *&c.*

I ſhall not enlarge upon the Subject of theſe bony Excreſcences; for the ſame Method, which will cure a Ring bone or Oſslet, will do in Caſe of Bone-ſpavins; only in the Cure of the laſt it may be proper to keep the Back-Sinew well oiled now and then with Oil of Swallows for fear the ſame contract too much, which it will often do when the Fire has been given deep: But if the Method I have ſet down be practiſed, there is not near ſo much Danger of Contraction. Bone-Spavin and Cure.

The *Blood-Spavin* is a Dilatation or Swelling of a Vein on the Inſide of the Horſes Hough, and in Human Bodies we call this Diſorder a Varicoſe-ſwelling, where the Blood in the Vein turns into a Kind of Eddy, and forms ſuch Tumours. Blood-Spavin.

The Cure of a Blood-Spavin is the ſame as that for an Aneuriſm or Dilatation of an Artery, only one Thing material muſt be minded, in which the tying up a Vein, and tying up an Artery, differ in an eminent Degree; for the Arterial Blood circulates The Cure. One Thing very material to be obſerved in

making a Ligature upon any Blood-Veſſel.

lates from larger into ſmaller Veſſels, but the Venal-Blood from ſmaller to larger; ſo that if you tie a Vein above the Hough, without tying it alſo below, the Tumour muſt neceſſarily increaſe as the Blood meets with Reſiſtance at the Ligature; for the Veins carry back to the Heart the ſuperabundant Blood from the Arteries. Therefore a Vein muſt be tied below, and an Artery above the Hough to cure a Swelling or Dilatation, of which I am now treating: And really no one Thing is more common amongſt the ignorant blundering Farriers, than to to tie up a Vein on the wrong Side the Varicoſe-Tumour; for theſe Fellows have no Notion of the Difference between a Vein and an Artery. Therefore they imagine that all the Blood-Veſſels are alike, and convey that Fluid from the Heart to the extreme Parts of the Body without carrying any of it back again.

From what has been ſaid it may be obſerved, that the Cure of a Blood-Spavin conſiſts in diſſecting the Skin and muſcular Fleſh off the Vein, but ſo as not to cut any, or however very few, of the Carnous Fibres tranſverſely. Then paſs a Piece of ſtrong Silk doubled and well waxed with Bees-wax both below and above the Tumour, which is performed with a crooked Needle not very ſharp, with an Eye in the Point ſufficiently large, that the Thread may leave it eaſily. And when the Blood-Veſſel is well tied both above and below the Swelling, cut it in two in the Middle, and heal the Wound with the common Green Ointment, *(p.* 283.)

Giving the Fire in the Cure of a Blood-Spavin unneceſſary.

Some Farriers give the Fire after tying up the Vein, but I think ſuch Practice unneceſſary.

CHAP. XLI.

Of the Poll-Evil, Bruiſes in the Withers, Warbles in the Back, &c.

The Poll-Evil.

THE Poll-Evil is a Swelling in the Nape of the Neck or Foll of the Horſe, juſt behind the Ears.

The

This often proceeds from Cruſhes and Bruiſes, The Cauſe.
ither with the Halter or ſome other hard Body;
nd ſometimes from ill Humours: But as I have
bſerved moſtly from the Halter's cruſhing this Part
f the Neck, when Horſes are unruly in breaking,
hoeing, &c. Therefore 'tis good to wrap Colt-
Halters with Liſts to make them ſoft and eaſy.

The Cure is much the ſame as with a Fiſtula, The Cure.
(viz.) to lay the Part open, where it can be done
with Safety, and apply the Fiſtula Ointment, &c.
very warm: But if the Poll-Evil be not taken in
Time, it degenerates into a hollow crooked Ulcer,
full of ſharp Humours, tho' this moſtly falls out for
Want of Care in the Beginning; and when the Bones
of the Neck are become foul and decay'd, I much
queſtion there is any Cure. However if the Matter
diſcharged do not partake of an ill Smell, &c. Oil Oil of Tur-
of Turpentine poured hot into the Sinus or hollow pentine good
Wound once a Day, and rubbing the Swelling with for the Poll-
the following Ointment, is moſt likely to ſucceed. Evil.

Take Oil of Bays, half a Pound; Oil of Turpen- The Oint-
tine, two Ounces; Quickſilver, three Ounces. Mix. ment for the
The Quickſilver ſhould be well kill'd (as 'tis Poll-Evil.
call'd) in the Oil of Turpentine when mixed with
the Oil of Bays, 'till none of its Particles can be
diſcovered with the naked Eye. Rub the Swelling
wice a Day, and cover the Neck with Flannel, or
a good warm Cap-hood.

Tents of any Kind are ſeldom or never proper in Tents im-
he Cure of the Poll-Evil, for they cauſe the Ulcer proper in
o become fiſtulous. Therefore Inciſion or Cutting moſt Caſes.
pen, where it can be done, is beſt; and where ſuch
Operation is impracticable by Reaſon of the conſi-
derable Branches of Nerves, Tendons, or Blood-
Veſſels, then a Tube or hollow Pipe made of Lead
urn'd down at the outermoſt Edge, and Holes bor'd
hro' it, to tie two Strings, ſo that they may be
aſtned round the Neck in Order to keep it in for

the

the Matter to run thro', 'till the Wound gradually heals by the Applications preſcribed. But one Thing is to be obſerved, to wit, that all Tumours, Abſceſſes, hollow or ſinuous Ulcers ſhould be open'd, either by the Knife, or by Cauſtic, in the moſt depending Part that can ſafely be come at; that ſo the Ichorous Matter, may run off before it acquire ſo great a Degree of Acidity, *&c.* as to corrode the Bones and other Parts, and ſo cauſe a troubleſome running Ulcer or Fiſtula.

Withers of a Horſe, where ſituate.

The Withers of a Horſe, is the joining of the Shoulder-Bones before the Saddle; and thoſe Horſes which are thin ſhoulder'd, as 'tis call'd, are moſt ſubject to be wrung in the Withers by ſuch Saddles as are wide in the Tree, or want Stuffing: And really it is ſcarce poſſible one and the ſame Saddle ſhould rightly fit ſeveral Horſes, whoſe Backs differ as much as Human Faces. Therefore I adviſe every Perſon to be ſo far prudent, for the poor dumb Creature's Eaſe, and his own Safety, as to have his Saddle rightly fitted to the very Horſe's Back which he is to ride the Journey upon. And if the Saddle want Stuffing, then to mind particularly, after one or two Days riding, whether the ſame do not bear upon the Horſe's Withers; for the new Stuffing will ſettle much, and it is a great Piece of Ignorance and Folly for any one to feel at the Saddle or Horſe's Back while he is in the Stable, whether it hurts or wrings his Withers, for by ſuch Trial he may be deceived. Therefore let him mount, or ſet a heavier Man upon the Horſe, and then let him try if he can get the Breadth of two Fingers between the Withers and Saddle, which Space is ſufficient; for if it ſit too high 'tis a great Fault, becauſe it wrings him in the Points, and will make him travel with Pain and Uneaſineſs, beſides bruiſing the Fleſh, and cauſing him to carry the Rider's Weight in a wrong and very improper Part: For if the Saddle be too narrow in the Tree, or the Pannel have too much Stuffing-in at the Point:

The Author's Opinion upon Saddles, *&c.* proper for a Journey.

oints, in such Case the Horse cannot be said to rry the Weight upon his Back, but rather upon s Shoulder-Blades. And altho' many jejune and olicksome Riders mount a Horse for a long Jour-y, without first having the Saddle well fitted to the ck; yet it is a Piece of great Indiscretion and bad onduct, to neglect so good and beneficial a Piece Oeconomy; and whoever slights these Precepts, hope it will be voted *Nem. Con.* that such Rider obliged to carry his Horse instead of the Horse rrying him, or at least to walk half of the Jour-y on Foot. And so far I must speak in my own ommendation, as to the Particular of saving the orse I ride from being wrung or hurt in the Wi-ers, that tho' I take good Care of my Saddles, t I cannot ride five Miles an End, without feeling ow and then with my Fingers under the Saddle ext the Horse's Withers whether it sit down, (as is called). Furthermore it is most easy for a lorse to travel and carry his Weight upon a good rge seated Saddle, and the more so, if the Person ho rides him be fat and bulky; for then he may e truly said to carry his Weight in so great a Com-ass, as that it will not gall or fret his Hide, *&c.* Therefore how prepostrous and unnatural must it e for a heavy Man to ride upon a Cockney-Saddle, hich may fitly be compared to a silly Man car-ying two Buckets of Water upon his Shoulders ith a round Pole, instead of a flattish one hollowed nd mechanically fitted to receive his Shoulders. If he Horse be young and his Back not used to the urthen, it will be the more necessary to ride him ith a large Saddle, that his Back may not war-e, or however as little as possible; for if the Weather be hot, and Journey long, it will be ex-eeding difficult to keep the Back of a young Horse om galling: However, the best Method is a large addle often scrap'd with a Knife, beaten and clean'd pon the Pannel from Sweat and Dirt, and the Horse's Back bath'd every Night with a little cold Water

Water wherein ſome Alum has been diſſolved. And it may not be amiſs every Day at Noon to take off the Saddle, and cool his Back by only throwing a ſingle woollen Cloth upon it. Nor is there much Fear of catching Cold from theſe Practices, if the Rider only conſider the Seaſon, and cover the Horſe's Back more or leſs accordingly, while the Saddle is off: For if we conſider the Thing rightly, we muſt know that it is the Motion and Heat of the Saddle which cauſes a kind of Bliſtering upon the Horſe's Back. And tho' it may be imagined, by ſome ſhort ſighted Folks, that a large Saddle is too hot, and will ſooner gall a Horſe than a ſmall one which (to them) ſeems much cooler; yet 'tis plainly the contrary, and every Day's Experience ſhews, that large Saddles are not only eaſier, and in Reality cooler to Horſes Backs, as well as much more eaſy and ſafe to all Men who are not accuſtomed to top a five-bar'd Gate, than the ſmall Sort can poſſibly be. And if, inſtead of the Follies and Fopperies of a certain neighbouring Nation we imitated them in their Way of ſaddling Horſes only, we ſhould not be ſo deſervedly laugh'd at, as I'm afraid we are. I could farther enlarge upon this Point, and ſhew the *Scotch* Carriers Cunning or rather Dexterity, in ſaddling their Horſes, and making them carry much heavier Packs without than our Carriers can with Saddles: But I hope what I have ſaid is enough to convince any reaſonable Man, that a large Saddle is eaſier and more convenient than a ſmall one both for Man and Horſe. Permit me now to proceed to the Cure of a ſore Back from a Cruſh with the Saddle.

Scotch Carriers load their Horſes without Pack Saddles.

If the Saddle be altered in due Time, I mean before the Blood-Veſſels, *&c.* are all cruſhed, the beſt Application muſt be camphorated Spirit of Wine, but leaſt the Apothecaries you get it from ſhould have a Spice of the K—e in them, when Camphire happens to be dear, you ſhould buy the Spirit of Wine and it ſeparate, and then you are ſafe. Then ſo

: I ſhall ſet down the due Proportion of Spirit
Camphire ſet for this Purpoſe.

Take Spirit of Wine rectified, four Ounces; Cam-
re, ſix Drachms. Mix.

Spirit of Wine camphorated.

By the continued Uſe of this three Times a Day
a few Days, and removing the Cauſe of the
mplaint, *viz.* the Preſſure of the Saddle-Bow
on the Withers, I dare ſay the Swelling will di-
rſe; but if it turns to Matter or grows ſoft and
zy, then it muſt be opened for fear of a Fiſtula,
l cured with the great Ointment, *&c. p.* 283.
Every one has his *Noſtrum* or Secret for the Cure
a cruſh'd Back; ſuch as a *cold Sod of Earth*, *Bole*
moniac, *White Wine Vinegar*, and *Whites of*
gs, commonly called by Grooms the *cold Charge*,
Salt and *Black Soap*, &c. which any one may
at Pleaſure; for, as I have ſome time ago ſaid,
atſoever is either potentially cold, or ſo in its
n Nature muſt be accounted a Repellent, and
pper, in ſome Caſes, to apply to Tumours from
at and Inflammation; nay even if you come to
Diſhclout by Turns ſqueez'd out of cold Spring-
ater and apply'd to the Part, it is as potent a Re-
lent, in my Opinion, as moſt others which bear
nore pompous Title. Yet by the ill Uſe of Re-
lents, many and bad Conſequences are brought
out: But for further Satisfaction I muſt beg the
ader will take the Trouble of turning back a few
es, and conſider what I have writ down under
general Term.

Cruſh on the Withers cured.

Warbles are ſmall hard Tumours or Swellings
er the Saddling Part of a Horſe's Back, occa-
ed from the Heat of the Saddle in Travelling,
are cured by Bathing them often by the fol-
ing ſpirituous Mixture.

Of Warbles, and their Cure.

Take Spirit of Wine, two Ounces; Oil of Turpen-
, half an Ounce; Tincture of Myrrh-Aloes, two
chms. Mix.

A *Sit-*

A Sit-Faſt, what.

A *Sit-Faſt*, proceeds moſtly from a *Warble* afte 'tis burnt, and is a Piece of the Horſe's Hide turn'd horny or hard by the Heat, &c. of the Saddle.

The Cure.

The Cure is performed by taking hold of th Edge of the hard Skin with a Pair of ſtrong Plyers ſuch as are uſed by Watchmakers, &c. and cutting out the horny Part entirely, and dreſſing it as a common Wound with the Ointment, *p.* 283. an taking Care to keep the Saddle from rubbing upo it. Therefore, if you are upon a Journey, th Saddle ſhould be chamber'd very nicely, and no carry upon a hard Ridge all round the Sore, but t fall off gradually, or the Horſe's Back will be wor hurt than before.

How to preſerve a Traveller from Galling by Riding.

It may not be amiſs to tell the Reader how h may preſerve his own Poſteriors, as well as th Horſe's Back, from galling, fretting, or excoriating and herein I ſhould be a pretty competent Judg not only by reaſon the Subject is of the huma Species, but becauſe I myſelf, tho' I often rid am very apt to gall and have the Skin fretted o my Poſteriors, unleſs I take great Care. And ev in this we ſee the great Difference or peculiar D poſition of one Perſon from another; for ſome w bear to ride further upon a bare Saddle-Tree wit out any Cover of Leather, than I can upon a ve eaſy Saddle.

I have obſerved lately in the News Papers an A vertiſement about a *Powder* for the entire Curing what I am now about: But the very Title and A count of it bewrays the Thing ſpurious and in nificant.

Large Saddles moſt eaſy, after a Perſon is uſed to them.

The firſt Thing is, as I have juſt now ſaid, ride upon a large Saddle, that your Weight may carried (let me ſpeak philoſophically) upon m Points than it's poſſible, in a little Saddle, to to upon; and by this you will find that every ad tional Point, provided you be not quite out of Reaſon, will ſtill eaſe the Places in the Mid where you preſs hardeſt upon the Saddle.

I

Next to this is often easing yourself by alighting om the Horse, and either walking slowly, or rest- g yourself upon some easy Seat, and now and then oling your Buttocks in cold Water to harden the in: For it is much easier to prevent, by good anagement, the Buttocks from galling, than to ake the Skin come on again, upon a Journey. nd herein People are as negligent and careless for eir Ease, as they are in other Particulars relating Health; for while their Buttocks are easy and ell, they think nothing of a gall'd A—se, then hich scarce any Thing is more painful, by reason e have so often Occasion to make Use on't. There- re they mount any Sort of Saddle, and cause an flammation before they are aware of it; neither ill they apply any Helps, or use any preventive lethods, before 'tis too late. For when by the idging, *&c.* in Riding, the *Serum* or watry Part the Blood is gathered between the two Skins, it then too late to prevent a sore Backside. There- re either apply pretty large Plaisters spread thin on Leather with *Diachylon*, or what is sometimes ll'd *Diapalma*, to the Buttocks, before you really ant them, or be content to jog on with a wry ace and sore A—se.

There is a great deal to be said why such cooling laister should preserve the Skin from fretting, or coriating, tho' I shall only name a few of its Vir- es. And *first*, it thickens your own Skin, or, as were, adds a new and stronger Scarf-Skin to de- nd the Ends of the Blood-Vessels, *&c.* from being eated and inflamed, and hinders the Skin from bbing into Wrinkles, which is one Reason why e gall so soon.

Secondly, It performs this by a Composition that very cooling and pleasant, and an Enemy to Heat d Inflammation in the Flesh, and which is in its vn Nature drying and healing.

Lastly, I advise these Plaisters be large, and ap- d to the Buttocks as plain and even as possible,

and

and to keep them as much as can be in the like Si tuation.

I ſometimes put them on after I am mounted and got a little Way into the Lanes, for fear c their running into Creaſes or Wrinkles while I a getting on Horſeback; but fat and unwieldy Peop cannot raiſe themſelves upon the Saddle ſo as to d this. Therefore they muſt put them on juſt befo they mount, and keep them even, as I have direc ed. Furthermore, it is neceſſary to have a Numb of theſe Plaiſters ready ſpread and roll'd up in Box for the Purpoſe, that ſo you may take a freſh one Occaſion requires; but while the old one will ſti and keep from Creaſes, it will do well enough.

They may be thrown by at Night, and the Bu tocks cool'd with Blue-Milk and Water, and la on in the Morning after ſtretching them a little.

Let them be ſpread thin and with a ſmall Ma gin, and by that Means your Linnen and Breech will keep clear of daubing, &c.

If the Traveller be ſo very negligent as not follow theſe wholeſome Directions 'till the Skin off his Buttocks, 'tis Pity but it ſhould continue However, I muſt tell him charitably, that nothi will in ſuch Caſe keep him more eaſy to his Jou ney's End, than thoſe very Plaiſters, which ſhou be applied before the Thing is too far gone. As this or that Sort of Lining of Breeches, Hare Rabbit-Skins, and the like, they are only good they cauſe the Buttocks to reſt more eaſy upo hard Saddle; which Sort of Furniture I by no mea recommend, unleſs it were to be uſed as a penit tial Scourge to the Poſteriors, in like Manner there are a Sort of Penance Belts to correct the S and Vices of the anterior Part of the Body.

A little Saddle compar'd to a Penance Belt.

If I have been tedious upon this Particular muſt beg the Reader's Pardon, having promiſe worthy Gentleman of my Acquaintance to ſpeak it in ſome Part or other of this Book.

CHA

CHAP. XLII.

Of a Shoulder-Wrench, Shoulder-Slip, Sinew-Sprain, &c.

BEFORE the Reader enter into this Chapter, his Notions and Judgment ſhould be full ught with the Properties of an Animal Thread or ore, for of ſuch are the Muſcles, Tendons, *&c.* ncerned in the Grievance, compoſed. And theſe operties have been explained before.

Horſes above all other Creatures are ſubjected to eſe kind of Ailments, and yet ſcarce any Thing more difficult in the Art of Farriery than to tell ſome Caſes, whether the Complaint be in the oulder, Back-Sinew, or Foot: And tho' every rrier will, at the firſt ſlight View of a lame Horſe, etend to tell you the Affair is in this or that par-ular Place; yet I would no more believe or truſt em, than a young, unfledged Phyſician (who has t received his Diſpatches from his College) in the re of any obſtinate and ſtubborn Diſtemper, not-thſtanding the Phyſician and Farrier are alike po-ive in their Way; therefore if your Horſe be lame fore or in his Fore-Parts, conſider rightly his Way going. But firſt I muſt inform the Reader, that Horſe's Shoulder-Blades are not fixed to his Body any Kind of Articulation or Joint, but by Ap-ſition or being laid on along the Side of the Ribs, d there faſten'd by the Muſcles, *&c.* which lie low and above them; ſo that when a Horſe re-ives a Hurt in the Shoulder, it is the Muſcles, endons, *&c.* which are relaxed or ſtretched at that nčture of Time, beyond their natural Tone of laſticity or Springineſs.

If the Lameneſs be in the Foot (except it be a t farbated Foot) the Horſe will halt more the rther he travels; that is, if the Complaint be the ravel, or a Cruſh with the Shoe, or a Nail that ars too hard upon a Vein, *&c.* he will not mend by

The Signs of Lameneſs in the Foot.

by Travelling, but generally goes worſe and worſe, and if the Roads be hard or rough, he will complain ſo much the more; tho' in a Shoulder Strain he will not make much Difference as to hard or ſoft Roads; and if the Wrench be violent, he will be apt to caſt his Foot outwards, forming a Circle as he goes.

The Signs of a Strain in the Shoulder.

If the Ailment is in the Shoulder, he will ſet his Foot down hardily to favour it, though he be turn'd ſhort on the Lame Side, which Motion tries him the moſt of any: But if you cannot yet diſcover where the Lameneſs lies, you muſt have the Shoe off, and his Foot ſearch'd and ſqueezed a little here and there with a Pair of Pinchers; and if his Sole be good he will not eaſily complain, unleſs there be Gravel, or a Nail hurt him, or the Shoe ſit down too hard upon his Quarters.

Back-Sinew Strain.

If it be neither in the Shoulder nor Foot, it may be in the Back-Sinew, which may be known by the Roundneſs of the Leg, or Inflammation and Heat thereabouts; or if not here, yet it may be in the Coffin-Joint, tho' no Swelling or outward Appearance of it can be diſcovered. I ſhall now proceed to the curative Intentions.

No Strain effectually cured under three Months Time.

In the firſt Place let it be remember'd, that a Strain or Relaxion of the Tendons is ſufficient to be cured in leſs Time than three Months; but that if the Horſe be continued in Uſe during the Grievance it may make him incurably lame. Therefore it is that Reſt, without the Farrier's Applications, avails more than ſuch Application without Reſt. And from hence it may be ſeen, how improper it is to ſee a Horſe to wear a Patten-Shoe, to force him to bear his Weight upon the weak Shoulder. And tho' I am told the Horſe is well after ſuch Management, yet I am very ſenſible he would be ſooner cured by pulling his Shoes off, and giving him Reſt and Eaſe.

The Cure.

If your Horſe be ſtrain'd in the Shoulder, let him be bled in the Thigh-Vein, and rubb'd with the following Mixture.

T

Take Oil of Turpentine, one Ounce; Spirit of Wine camphorated, two Ounces. Mix.

Mixture for a Strain in the Shoulder.

This ſhould be rubb'd well in at twice, half of it ſoon after Bleeding, and the Reſt twelve Hours afterwards, walking the Horſe a little 'till the Heat be gone off.

If you put in more Spirit of Wine than I have order'd in this Mixture, it will not be ſufficiently warm ſo as to penetrate deep enough to do Good, and if more Oil be made uſe of, it will be too hot, and cauſe the Hair to come off, and the Horſe's Hide to crack and break as far as the Mixture reaches: Therefore if the Medium be kept ſo as I have ordered, I believe it will be as effectual as any Thing which can be apply'd, and yet not ſo hot as to bring the Hair off, altho' it be heated in with a hot Fire-ſhovel.

Captain *Burdon* in his *Pocket-Farrier* orders Oil of Spike, and Oil of Swallows mix'd, to rub a ſtrained Shoulder; but theſe two Oils are of quite different Properties, as much as Water and Spirit of Wine; ſo that by this injudicious Compoſition, 'tis eaſy to gueſs at the Captain's Tether of Learning with Relation to Medicine.

Rowelling is generally the next Thing preſcrib'd after Oiling and Bleeding, though I cannot ſee any great Reaſon for it, unleſs the Strain be exceeding violent, and a Flux of Humours brought upon the part by the Tenſion and Heat; then indeed I cannot ſay any Thing againſt Rowelling under the Belly and in the Breaſt, which may help to cool and eaſe the Pain. And in my Thoughts Scopels or round pieces of Leather with Holes in the Middle, lap'd round with Tow, are the moſt fit and proper in theſe Caſes. But in order to make the Rowel diſcharge moſt copiouſly, let the Piece of Leather with Tow be dipt in the following Ointment made warm.

Rowelling ſometimes proper in Strains of the Shoulder.

Ointment for Rowelling.

Take common green Ointment, (p. 283.) two Ounces; Cantharides or Spaniſh Flies in Powder, three Drachms. Mix.

Every other Day with a ſmall Bunch of Feathers work up ſome of this Ointment into the Wounds, and it will cauſe a copious Running.

If the Strain be in the Back-ſinew and the ſame not violent, I think the Application of the following cold Charge may be ſufficient, with Reſt and Patience: But without theſe I believe the Symptoms will be aggravated.

Cold Charge for a Strain in the Back-Sinew.

Take of Bole Armoniac in Powder, half a Pound; White-wine Vinegar, and Whites of Eggs, as much as will make it the Conſiſtence of a Poultis. Mix.

Apply it pretty thick upon a Piece of Leather or double Cloth, and as it grows dry put on more, 'till ſuch Time as the Tendon or Sinew has receiv'd its natural Tone.

There are a great many different Methods, as Captain *Burdon*'s Turnep Poultis, *&c.* Bleeding in the Sprun-Vein, Poultiſes of Cow's Dung, and the like: But the cold Charge exceeds them all; tho if the Sinew be much relaxed, or if the Horſe be what the Jockies call, let down in the Sinew, I think nothing comes up to firing: Yet ſuch Horſes can never be made ſo ſtrong in that Part, but a hard Courſe, or Running a Race upon hard Ground, will let him down again, tho' he may perform indifferent well upon a Road, provided he has had a Winter's Running after giving the Fire.

A Winter's Running neceſſary after giving the Fire for a Strain in the Back-ſinew.

Strain in the Back commonly call'd a Sway'd Back.

If the Lameneſs be in the Coffin-Joint, oiling with the Mixture for a Strain in the Shoulder, and ſufficient Reſt may perform a Cure; but I have known theſe Strains very tedious in going off.

For a Strain in the Couplings, I adviſe the following ſtrengthening Charge.

Take

Take Pitch and Roſin, of each four Ounces; common Turpentine, three Ounces. Mix. Pour it on warm, and cover the Fillets all over with Tow or Hards.

I have juſt mention'd the Signs of Lameneſs in the Foot, and how it may be diſtinguiſh'd from a Shoulder-Slip, *&c.* But I ſhall treat of the ſeveral Diſorders attending that Part of the Body, with the Methods of Cure, ſeparately in ſome ſubſequent Chapter.

CHAP. XLIII.

Of the Mallenders, Sallenders, &c.

MALLENDERS are a very ſore Thing happening to Horſes, making them ſtumble and go lame.

They are ſituate upon the Bending of the Knee on the Inſide, and diſcharge a ſharp thin indigeſted Matter.

Sallenders appear upon the Bending of the Hoof, and make a Horſe go lame behind. Sallenders, what.

The Cure of both theſe Infirmities is perform'd by waſhing the Parts with a Lather of Soap warm, or with old Piſs; after which apply the following Ointment. The Cure.

Take common Turpentine, and Quickſilver, of each an Ounce; incorporate them well by ſtirring for a long Time in a Pot, and ſpread 'em upon Pledgets of Tow, and dreſs Night and Morning 'till all the Scabs are fallen off. But if this does not not ſucceed, take the following, which is yet a more effectual Method tho' 'tis better to cure any Diſorder with eaſier or more mild Applications, if it can poſſibly be done, for which Reaſon I juſt mention'd the Turpentine and Quickſilver. Ointment for the Mallenders.

Another Ointment for Mallenders or Sallenders.

Take Flanders Oil of Bays, or for want of that of render'd Hog's Lard, two Ounces; Sublimate Mercury, two Drachms. Mix. Anoint the *Mallenders* or *Sallenders* every Night and Morning for four Turns, and I dare say it will cure them, by rubbing with a little Quicksilver mixed with Hog's-Lard afterwards, which should be done for three or four Days, to cause the Scabs to fall off and the Hair to come afresh.

CHAP. XLIV.

Of the Grease and Scratches, Mules and Kibed Heels.

I Believe I need not trouble the Reader with a tedious Description of these Distempers, by Reason they are sufficiently known and apparent to every Body.

The Cause. The Cause of these and such like Disorders is from over Exercise, when a Horse is either over fat or lean, or in other Words, when he is exercised above his Keeping, and has not due Care taken of him, in Dressing, Feeding, *&c.* or when he goes too near, and knocks one Leg against another so as to bruise the Flesh, and cause Heat, Inflammation, *&c.* in which last Case great Care must be had in Shoeing, that he may be made to go as wide as possible, otherwise these Kinds of Horses will be difficult to manage so as to keep them from the Grease, *&c.*

If the Grease be an Attendant of some other Disease, such Disease must be cured before the Grease can be removed; for very often it is an Attendant upon the Farcin, Yellows, and other Disorders of the Blood and Humours.

The Cure. If the Horse be full of Flesh the Cure is to be begun by Evacuation, such as Bleeding, Purging, *&c.* and his Heels always kept as clean and sweet as possible, by washing with warm Water and Soap; for

for nothing promotes the Greaſe more than Negligence and Naſtineſs, and as I have told the Publick in my Notes on *Burdon*, nothing is better for the Cure of the Greaſe than a good deal of Elbow-greaſe properly apply'd, when the Sores are kept clean waſh'd. But few, very few Grooms will take the true Pains requir'd to preſerve a Horſe's Legs in order, eſpecially if ſuch Horſe is often rid hard either upon the Field or Road. Therefore the Maſter's Eye and Hand are as neceſſary to keep his Horſe from the Greaſe, &c. as to ſee them fed, nay much more ſo; becauſe a lazy Fellow can ſooner toſs a Feed of Corn into the Horſe's Manger, than clean his Legs by waſhing with warm Water, &c. as he ought. And in my Thoughts more Horſes are greaſed by bad looking to, than by hard Riding, or any Diſtemper Horſes may be ſuppoſed to have, which may bring on ſuch Malady. Therefore if you have a Horſe that is inclinable to ſwell'd Legs, be ſure to chooſe as careful a Servant as you can to look after him; for without great Care, as I ſaid before, no Medicines will effect a Cure.

Elbow-Greaſe when proper.

I believe, out of the many Boys I have had to look after my Horſes, I have had but one that could truly be ſaid to be ſo careful, that you could not greaſe one whilſt under his Care and Management: For altho' he was as I muſt confeſs very apt to get too much Liquor, yet drunk or ſober he always turn'd his Horſes out with clean Heels, ſo that I could more eaſily forgive his common Faults. And unleſs your Servant every Time he goes into the Stable, or however very often in a Day, rub your Horſe's Legs with his Hands after the Legs are dry and clean, you can expect nothing but the Greaſe from a Stagnation of the Blood and Juices in thoſe depending Parts, for want of ſuch muſcular Motion, which by Turns naturally compreſſes the Veſſels when the Horſe is at Graſs, and thereby forwards Circulation. Therefore I would propoſe a Piece of wholeſome Advice to all thoſe Maſters who are

troubled with what we call *ſtiff-back'd Servants* that cannot ſtoop but with Difficulty, which is, that ſuch Maſters would turn their Horſes to Graſs, and allow them the like Quantity of Corn in Summer which they ſhould do in Winter, if they are expected to do great Service; and then I am ſure they will not be ſubject to the Greaſe, and yet perform a Journey very well, but not look ſo ſleek and fine coated as thoſe which lie in the Houſe.

Proper Exerciſe the beſt Remedy.

If you can't conſent to your Horſe's lying out in Winter, with a Hovel or half-Houſe for them to run into at Pleaſure, where they ſhould have their Hay and Oats with warm Bedding, &c. I think turning out in the Day Time moſt likely to cure the Greaſe, to prevent it when threatned; and by what has been ſaid of the Cauſe, it is eaſy to judge of the Cure; for as the Greaſe proceeds from the Blood and Humours ſtagnating or ſtopping in the Limbs, Exerciſe muſt be the Remedy to promote the Circulation of the Juices. And this, together with keeping the Heels clean waſh'd, exceeds any Medicine inwardly, or Application outwardly, for the Cure of the Greaſe. The beſt Exerciſe is for the Horſe to go at large as he pleaſes amongſt the Graſs; for if this happens to be in Plenty, or that he walks up and down amongſt Weeds, Ruſhes, Barks, or ſuch like, the Dew which reſts upon them, will by falling upon the Horſe's Legs ſo cool and eaſe the Inflammation and Heat, that I have known many cured this Way.

A large Stall proper for curing the Greaſe.

Next to turning a Horſe out for the Cure of the Greaſe or Scratches, I am ſatisfied a large and convenient Stall, with good Dreſſing, &c. muſt take Place. And if your Horſe be taught to lie down at the Word of Command, as I have ſhewn in ſome former Pages, he will be ſtill leſs liable to the Greaſe, Scratches, Mules or Kib'd Heels; for by lying down often, the Blood and Juices will circulate with more Eaſe in the Limbs, which are then in a Horizontal Poſture; ſo that it is not, according to the vulgarly received Opinion, the Humours which

which fall down from the Body upon the Limbs which cauſe the Greaſe, *&c.* but the ſlow Circulation, and the great perpendicular Column of Blood which preſſes hard againſt the Sides of the containing Veſſels for want of Exerciſe; or in other Words for want of muſcular Contraction, which occaſions a Stagnation, and of Conſequence the Scratches, Greaſe, *&c.*

The Jockies Notion of Greaſe confuted.

It is a very fooliſh and abſurd Notion to imagine a Horſe full of Humours (as the Jockies call it) when he happens to be troubled with the Greaſe, Scratches or ſore Heels: But ſuch ſhallow Reaſoning will always abound, while Peoples Judgments are merely ſuperficial. Therefore to convince ſuch unthinking Folks, let them take a thick Stick and beat a Horſe ſoundly upon his Legs, ſo that they bruiſe them in ſeveral Places; after which they'll ſwell, I dare ſay, and be in Danger of Greaſing. Now pray what were theſe offending Humours doing before the Bruiſes given by the Stick? And it is abſurd to ſay, that when a Horſe travels he raiſes the Humours in his Body, and then they fall down into his Limbs; whereas it is nothing but his knocking his Legs together, Want of Care to keep his Heels clean, and Heat of the Parts occaſion'd by a hard Day's Journey, which for the moſt Part bring on the Greaſe, *&c.* But leaſt I ſhould be thought ſingular in pretending to cure the Greaſe, by Diet, Exerciſe, and good Dreſſing, I ſhall ſay a Word or two with relation to the Medicines of moſt Efficacy in ſuch Intentions of Cure. And *firſt*,

Capt. *Burdon*'s Turnep-Poultis not improper for curing the Greaſe.

I don't think Capt. *Burdon*'s *Turnep-Poultis* a deſpicable Application: For when the Heels are clean waſh'd, and the Hair cut away, ſuch Poultis may, by its genial Warmth, and more homogenial Juice, much contribute towards a Cure. But then, unleſs the Horſe will lie down of himſelf, or at the Word of Command, the Poultis will not do ſo much Service; for it is generally his ſtanding Days and Nights together in narrow bound-up Stalls, which occaſions

this loathſome and naſty Diſtemper. Therefore unleſs the Greaſe happens to be an Attendant of ſome inward Diſeaſe or outward Accident, I am of Opinion what I have already ſaid about it may lead any ſenſible Men to the Cure.

Bleeding, &c. neceſſary.

Bleeding, Purging, Rowelling, and moſt other Evacuations take Place (according to Cuſſom) in the Cure of the Greaſe and Scratches. And when, as I have hinted, this Diſtemper is the Attendant of ſome other Diſeaſe, which proceeds from a general Fullneſs of the Veſſels, ſuch Diſcharges are requiſite and neceſſary, without all manner of Diſpute: But then again to purge a Horſe *within an Inch of his Life*, in order to carry off the Greaſe with the Excrements, is a Piece of mere Enthuſiaſm: For what theſe Adepts imagine to be Greaſe is the natural *Mucus* of the Guts; which ſlimy Matter I have ſhewn to be as neceſſary, in its Place, as the very Blood within the Veins.

I muſt own, when a Horſe's Legs are very hot, and enflamed, the Groom may over-do his Part in rubbing them, either with a Cloth or his Hands. Therefore, in this Caſe, Moderation is to be uſed; and if you will not turn the Horſe out in the Day-time 'till his Limbs are cool'd and made eaſy, you ſhould order him into a very large Stall, if he is not in one already; but what other People think a large Stall, may, in my Opinion, be otherwiſe. For what I call a large one ſhould be at leaſt ſix Foot wide, that a tall Horſe may ſhoot out his Legs at Length, that ſo the Blood may paſs along without the Reſiſtances it muſt naturally meet with when a Horſe lies all on a Heap, or with his Legs under him. Furthermore it is neceſſary, that a Stable ſhould be ſo pav'd that there be not too great a Declivity or Steepneſs between the fore and hind Parts of the Horſe. For if he ſtand too low with his hind Legs, moſt of his Weight will reſt upon them and give him the Greaſe, eſpecially if he is in the leaſt inclinable to what we term *gourdy Legs*. And I really

Stall not too ſteep backwards.

Why Horſes greaſe oftener behind than before.

I really believe, if Horſes were to ſtand as low with the fore Feet as they generally do with their hinder Feet, they would greaſe and ſcratch ſooner before than behind; and there can be no other Reaſon why a Horſe ſhould greaſe ſooner behind than before, unleſs that he is apt to cut oftener in the Place firſt mentioned.

Some of our ancient Farriers adviſe the tying up of the Thigh Veins for the Greaſe: But I by no Means approve of ſuch Practice, it being quite oppoſite to the Intention of Cure; ſeeing that inſtead of tying up or ſtopping a Vein, they had better (were it poſſible) add another more than there is already, and ſo the Blood would circulate more eaſily, when there is a Kind of Stagnation in the Limbs. Tying up the Thigh-Veins for curing the Greaſe, an Error.

I ſhall not enlarge upon this Head farther than informing the Reader, that a large Stall, good Bedding, clean Feeding, Dreſſing, and Exerciſe, along with the Uſe of the cordial Ball with a little Antimony in it, will moſt certainly cure the Greaſe. But to give a Check to and curb the preſent Evil, turn the Horſe out in the Day time in his Cloaths, if he be uſed to Cloathing, and when his Heels are dry and cool, it is a bad Groom, or a worſe Maſter that ſuffers him to relapſe, except he be ſuch a Horſe as cuts intolerably; if ſo, he is not worth my while to mention, farther than to bequeath him a Collar, for he is not fit for the Road.

Laſtly, thoſe Gentlemen who admire the Diverſion of Hunting, and are hard Riders, ſhould take this Piece of Advice along with them, *(viz.)* that if 'tis a young Horſe, and unuſed to Leaps, he ſhould have the greateſt Care imaginable taken to pick out all the Thorns, *&c.* that may ſtick about his Fetlock-Joints, *&c.* For as young Horſes generally bruſh thro' rather than clear their Leaps, they are apt to hang their Legs againſt Stubs, *&c.* which, with the Points of Thorns ſticking in the Fleſh, cauſe Inflammation and Greaſe. Therefore let ſuch Thorns be very carefully ſearched by the Finger, and

pull'd out, and the Legs well wash'd with warm Water, and after they are dry let them be bath'd with some common Spirit of Molosses, Malt, or the like; and after Feeding properly, let him be forced down in the Manner I have taught, if he will not lie down of himself, which 'tis ten to one he will not, because his Legs will be uneasy from the Pricks, Knocks, *&c.* sustain'd in getting thro' the Hedges. And as a young Horse is, from his not being used to such Work, and the present tender Disposition of his Fibres, most subject to grease or scratch in the Heels (as 'tis call'd); for these Reasons the Groom ought not to leave him, 'till he has eased his Legs as much as possible, and seen him lie down. *In fine*, a Horse's Legs in such a Case should be wash'd and clean'd at least three Times a Day. And if he will lie and feed with Captain *Burdon*'s Turnep-Poultis, I can say nothing against such Application.

When the Grease is got to an intolerable Height (which it need not be suffered to do unless People are both silly and obstinate) so that the Hair flares, and is (what some term) *pen-feather'd*, then indeed it will be hard to cure it, in such Manner as that the Hair shall lie smooth afterwards. However, to put a Stop to such nauseous Discharge, let the Heels, after cutting off the Hair, be first wash'd very clean with Soap and Water, then bath'd with the following Wound-Water pretty warm twice a Day for three Days.

A drying Wound-Water for the Grease.

Take Roch-Alum, and white Vitriol, of each two Ounces; powder them together, and burn them either in a Crucible or upon a clean Fire-Shovel till they become a white Calx: Then take Camphire, one Ounce: powder it by rubbing the End of the Pestle with a little Oil; and of Bole Armoniac in Powder, two Ounces; River or Rain-Water, two Quarts. Make the Water hot, and stir the other Things into it for a considerable Time.

When

When you uſe it, it ſhould be ſhaked up, and a little of it warm'd in a Pot, and the Sores waſh'd with a Piece of Spunge or Rag.

It is a Folly to imagine, that there is Danger in drying up the Ulcers in the Heels of Horſes troubled with the Greaſe, which ſeemingly diſcharge ſo much ſtinking Matter. For it is the Lodgement of ſuch Matter amongſt the Wounds and Hair of the Heels, that makes it of ſuch offenſive Savour. In like manner the *Saliva* diſcharged in human Bodies during a Salivation ſmells exceeding ſtrong and offenſive; but it is not the *Saliva* or Spittle that naturally ſmell ſo, but the Breath, which acquires ſuch Taint, as it paſſes over the numberleſs ſmall Ulcers in the Mouth, Throat, *&c.* of ſuch Perſons. And this is eaſily try'd, by impartially ſmelling to the diſcharg'd *Saliva*, in a Place which the Patient's Breath cannot have tainted. Neither is it, in the Caſe of decay'd and rotten Teeth, the Perſon's Breath that ſtinks, but the Teeth; for only remove ſuch Cauſe and the Effect will ceaſe. Therefore there is not, ſtrictly ſpeaking, any ſuch Thing as a ſtinking Breath, unleſs ſuch Perſon has an Ulcer of the Lungs, which contaminates the very Air in Inſpiration.

Horſes are very ſubject to the Scratches or kibed Heels, from travelling in deep ſandy Lanes, or from a natural Gourdineſs of the Legs, but moſtly for want of Care in waſhing and keeping them clean after Exerciſe. Scratches, Mules, or kibed Heels.

The Scratches are ſo painful a Diſorder, that they will cauſe a Horſe to loſe his Appetite, and go exceeding lame and ſtiff for ſome Time after ſetting out.

The Cure is the ſame with that of the Greaſe; only if the Scratches be dry, 'tis beſt to keep the Heels ſoftened and ſupple with Curriers Dubbing made of Oil and Tallow; for this will keep the Hide from cracking, and preſerve it as well as it does Leather; and it is the only Thing to hinder the Scratches, by uſing it often before Exerciſe, and The Cure.

washing the Heels with warm Water, when the Horse comes in.

Watery Sores and running Frush.

I shall not make a distinct Chapter of watry Sores, *&c.* of the Legs, as Mr. *Gibson* has done, seeing these Disorders may be considered under the Chapter of the *Grease*, &c. And if a Horse has naturally a running Frush, I believe there is no Cure that can be accounted safe, no more than we can cure People of sweaty Feet. Therefore the best Way is to keep both these Inconveniences as sweet and clean as the Circumstances of the Case will admit of, by reason an entire Drying up of such superfluous Matter, which Nature has thought fit to discharge this Way, might bring on worse Evils.

I shall now proceed to the Distempers of the Foot: And *first*, of *Surbating*.

CHAP. XLV.

Of Surbating, and narrow Heels.

The Signs.

I MUST own, that the Farriers have a great many Names for Distempers that would puzzle a Man to find out their Etymologies: nor can I think from whence the Term *Surbating* comes, unless from the *French* of *Sur* and *Battre*, which signifies to strike upon, as when the Horse's Hoof strikes upon the Pavement, and thereby becomes hor, or what we call *surbated*.

The Cause.

Surbated Hoofs proceed from hard Usage and injudicious Shoeing, tho' mostly from the natural Conformation or Make of the Horse's Hoof, which if, instead of being of a flat Make and open Heel, it is a deep Hoof with a narrow Heel, you may fully expect he will (if used upon hard Roads) become surbated or beaten of his Feet in a very short Time, let the Owner take what Care he can of him.

I hope I need not tell the Reader, that easy Shoeing, Greasing, or Liquoring the Hoofs with Hog's Lard

Lard or any other Greaſe (which is ſtill the ſame) as I have ſhewn in ſome of the preceding Chapters, and Stuffing every Night with ſoft Cow's Dung, is the beſt Method to eaſe a beaten Foot. And if now and then you order a little Print of freſh Butter to be put upon the Sole of the Foot, and lay the Cow-Dung uppermoſt, it will ſtill make the Horſe travel with more eaſe to himſelf and Safety to the Rider; for he will not, when his Feet are eaſed, be ſo apt to ſnapper and ſtumble. And I have obſerved, that theſe Kind of tender-footed Horſes are worſt when they are new ſhod; for 'tis either the Beats of the Hammer, or the Shoe that is not yet ſettled to their thin and tender Soles, that makes them tread like a *Cat upon a hot Backſtone*, as we uſe to ſay in the North: But when the Shoes are ſettled to the Feet, theſe Horſes will (ſome of them) make a tolerable Shew in a Dealer's Hand, if he is ſo wiſe as to keep the Spur on the Side, and the Horſe on ſoft Ground. But leaſt I ſhould be thought to teach them more Cunning than they have already, (tho' they moſtly have Occaſion for it, ſeeing all Eyes are upon them) I muſt proceed; only, before I leave the Subject of beaten or ſurbated Feet, let me warn the Reader of the common Trick which the Dealers uſe when they happen to have a Horſe that's tender-footed, (*viz.*) they always ſhew you theſe Horſes in wore-out bad Shoes, and pretend that when he's ſhod he'll go ſound and clever. But it is a Miſtake, as I have now hinted; for if he be lame in Shoes that are ſettled to his Feet, I am ſure he will be ſo in new Shoes in a much greater Degree than we ourſelves are in new Shoes; otherwiſe from whence the Proverb, *as eaſy as my old Shoe*. But while the Horſe is young and mettleſome he ſcorns to yield to or ſhew the growing Infirmity. In like Manner as we ourſelves, when Boys, could tread upon harder Grounds, and bear more pinching Shoes than we can at preſent. Therefore, I ſay, it is of the utmoſt Conſequence to examine well the Make of the Hoof when you de-

ſign

ſign to buy: For tho' one of theſe ſo uſeful Creatures may trot ſound on hard Ground upon a Shew; yet if his Hoof be what we term a deep Hoof with a narrow Heel, he ought to be refuſed for it, if the Buyer want one to ſerve him a good while; but ſuch Horſes may do well enough for thoſe whoſe Buſineſs it is to buy the D—l and ſell the D—l, and may ſerve well enough on Roads that are not too hard for their Corns. However, I muſt tell the Reader that ſuch Kind of Horſes cannot be call'd good for the Road, by Reaſon the Road muſt be

Pioneer Horſes.

firſt of all good for ſuch Horſes: For when you ride one of theſe you ſhould ſend a Pioneer before to level the Roads.

It has been a Method long amongſt Farriers, to order a Stuffing of Ox or Cow's-Dung and Vinegar for the Soles of the Feet in theſe Caſes; but ſurely theſe Fellows do not rightly conſider the Virtues of Vinegar any farther than deeming it a Cooler, and therefore good againſt a hot, ſurbated Hoof: But I would have ſuch People know it is not only cooling but alſo reſtringent, which laſt Property is diametrically oppoſite to the Intention of Cure. And beſides, this vegetable acid Juice may by its eminent cooling Quality, if uſed to a hot Hoof, cauſe the Horſe to founder, and go lamer than he would do without ſuch Application, which benumbs him exceedingly in ſuch Caſes. Therefore you ſee how neceſſary and requiſite it is for a Man who undertakes to preſcribe Medicines either inwardly or outwardly, to conſider, throughly and with Judgment, all the particular and different Qualities or Virtues of every individual Ingredient in the Compoſition, otherwiſe he can never be ſaid to preſcribe judiciouſly; for although at firſt ſlight Conſideration a Drug may ſeem properly adapted for the Cure of a Diſtemper, yet if we do but give ourſelves Liberty to conſider a little, we ſhall find perhaps ſuch Drug is endued with ſome very different Qualities more than what we at firſt imagined. But to return:

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There are others again who are for ſoftening the Sole of the Foot with greaſy Things, and afterwards pouring in a Mixture of boiling Pitch and Tar: But I do not think theſe Things can do any Service, becauſe no right Reaſon can be given why they ſhould eaſe a ſurbated Hoof. Therefore I rather recommend old *De Grey*'s Method, which was to take two new-laid-Eggs, and after pricking the Feet well, break them raw upon the Soles. After which ſtuff with Ox or Cow-Dung.

If you uſe only the Whites of Eggs with ſuch Stuffing, I believe it will be ſtill better; for they are moderately cooling, and by their clammy Nature add Firmneſs to the dry and brittle Hoof.

I have ordered a Horſe of this Sort to be ſhod with Pieces of old Hat under the Shoes, thinking thereby to let him tread ſofter, but all to no Purpoſe, for I could find no Difference in his Travelling. So that in the Main there is no Cure for a beaten Hoof. Therefore what I have ſaid before is all that can be done in the Caſe.

By a Horſe's being Hoof-bound is meant, when his Heels are too narrow, *&c.* or that his Hoof is bound up and drawn together by Wrinkles, both which are a Sign of too great Heat in this Part of the Horſe's Body. Hoof-bound what.

There are many and various Methods now in Uſe for the Cure of this Diſorder of the Hoof; and Farriers, no doubt, will tell you that drawing the Soles, and ſcrewing the Heels wider with a Piece of Machinery for the Purpoſe, will certainly cure your Horſe. But, altho' I have often taken Notice of this barbarous Cuſtom, and been ſorry to ſee a Flag of Horſe-Soles hung out upon every ſilly Smith's Door; yet I could never convince them that ſuch Method was erroneous and fooliſh, or that they did Miſs when they ſcraped away ſo much of the Fruſh as they generally do to open the Heels in Shoeing, tho' by ſo doing they weaken the Heels and make them

them approach nearer together. But as I have ſaid before, *Qui vult decipi, decipiatur.*

Narrow-Heel. I can give no particular Directions for the Cure of narrow-heel'd Horſes, beſides what I have ſaid under the Title of beaten and ſurbated Hooſs. And altho' Mr. *Gibſon* has writ well upon Farriery, yet I think he's out, where he deſcribes an Operation for the Purpoſe, ſeeing little Good ever accrues from it.

CHAP. XLVI.

Of Gravel, Nails, &c. in the Foot.

INEED not deſcribe the Gravel in the Hoof, any further than what I have done in the preceding Chapter, where I treated of Lameneſs and how a Perſon might gueſs whether a Horſe was lame in the Foot or Shoulder.

The Cure. The *firſt* Thing is to get out the Enemy as ſoon as you can; but if you have not very good Reaſon to believe your Horſe gravel'd, by pinching his Sole moderately with a Pair of Pinchers, (for any Horſe will ſhrink if he's hard wrung:) I ſay if you don't find ſufficient Reaſon to believe he is gravel'd, do not ſuffer the Smith to rip and tear up the poor Creature's Foot with his drawing Knife; for by ſuch injudicious Practice the Horſe often gravels, tho' he was not before ſuch Work, by making the Sole ſo thin that the Gravel works itſelf thro' to the Quick; and really there is no Occaſion to rip up the Foot ſo much, becauſe if you ſqueeze him only at every half Inch Diſtance round the Hoof, you will be ſure to hit the Place, if there be Gravel. But then again you are to give Allowance for a thin and thick, and firm Sole; for thin-ſoled Horſes, or ſuch as have tender Feet, will ſhew Symptoms of the Gravel, upon this Tryal, altho' there

there is not the leaſt Bit got thro' the Sole. And therefore I ſay, you muſt give Allowance for a tender-footed Horſe.

The Gravel moſtly follows the Nail Holes, and when theſe paſs too near the Quick, 'tis then ſuch Sort of Matter gets in and corrupts, working its Way continually upwards towards the Coronet, or Part between Hoof and Hair, where it very often forms what the Farrier calls a Quitter-Bone, of tedious and difficult Cure.

Furthermore a Horſe may be gravel'd from his being ſo thin pared in the Heels or elſewhere of his Foot, that it works its Way thro'; yet I believe the Farriers often make a Miſtake by calling the Lameneſs a Gravel, when it is the Horſe's Foot which is cruſh'd about the Heel by the Shoe that ſits too hard, and the cruſh'd Blood when grown corrupt makes the Horſe halt and go lame; therefore upon ſearching the Hoof it is term'd a Gravel. But as the Cure of both are the ſame, we may the more eaſily forgive the Miſtake.

After you have got out all the Gravel, (which may be known by a Diſcontinuation of the Blackneſs,) the Place may be healed with the Green Ointment, *Page* 283. which muſt be apply'd very warm, or rather poured hot into the Grievance; and afterwards fill the hollow Part with ſomething of a more firm Conſiſtence, ſuch as black Pitch, with a little Turpentine, or the like. However it may be proper every Night to view how Matters go, leaſt the Cement be dropt out in Travelling. The beſt Way to preſerve it in its Place, is to leave the Hole as rough as poſſible, and hollow'd a little under; that is, to make the Hole larger within than without, in the ſame Manner as we fix the Gudgeons of a Door in Stone, by melting Lead into the Cavities.

Some have a Method, and that not deſpicable, of burning Oil of Turpentine in the Hole, after the Gravel is got out; for by this Means the Sole, I

meau

mean the thin Part next the Quick, is made harder and firmer, to hinder the getting in of foreign Matter; and after burning the Oil, to melt in any Kind of Cement, such as Pitch, Rosin, Burgundy-Pitch, or the like.

Sole to be drawn, if the Gravel lie deep.

If the Gravel lie deep, or thro' the Sole of the Foot, which may be easily told when you trace it with the Farrier's drawing Knife, then indeed it is safest and best to draw the Sole, and by this Method you may hinder a Quitter-Bone; for unless you proceed so as to fetch out all the Gravel, it will still work upwards, as I have said; like as an Ear of Rye or Barley will go further and further up one's Arm if we put it under the Wrist-band of the Shirt, and stir the Arm from and to the Body. For a Horse's Hoof is smooth upwards and rough downwards, in the same Manner with an Ear of Rye or Barley: So that if any Gravel get to the Quick, it cannot come out the same Way it went in, unless scraped out, but works still further and further upwards, 'till it makes its Egress about the Coronet of the Hoof. Therefore, if the Gravel lie deep, draw the Sole, and apply Tar and Turpentine warm, 'till a new one be formed firm enough for the Horse to travel upon.

Coffin-Bone affected with the Gravel.

Sometimes the Grievance proceeds still farther, and affects the Coffin-Bone, which is of so soft and spungy a Nature, that it soon turns carious and rotten. Therefore, if this be the Case, (which tho' it cannot be told 'till the Sole is drawn, yet it may be easily discerned afterwards in two Dressings when the Blood is stopp'd and the Part well wash'd, by a Continuation of the Blackness, over-against the Hole, in the Sole that's drawn;) I say, if the Coffin-Bone be tainted, nothing exceeds the actual Cautery or Burning Iron contrived with a Point like a Sugar-Loaf; and by drying the Bone in this Manner, and the Application of the following spirituous Mixture, with the green Ointment, *p.* 283. over all, the Part may be made sound and without Blemish, which it

The Cure.

can

an ſcarcely be, when the Gravel burſts out about he Coronet. The Mixture is this :

Take Tincture of Myrrh-Aloes, half an Ounce; Tincture of Euphorbium, two Drachms. Mix. Tincture for the Gravel.

Apply this, by dipping a ſmall Dozel of Lint in t, to the decay'd Bone, without warming, twice a Day, and the green Ointment over all, as before ainted.

I can't ſay but there is a great Similitude or Agreement between a Man's Nails and a Horſe's Hoof; for when there happens to be a *Gathering* (as 'tis call'd) under any of the Nails, if it be near the Root of the Nail, it often cauſes it to grow in Ridges or Wrinkles ever after: And in like manner it fares with Horſes Hoofs when the Gravel gets up to the Coronet, where forming a Quitter-Bone, the Farrier is obliged to apply ſuch Things as will deſtroy the Excreſcence or hard Subſtance, and unleſs great Care be taken, the Hoof will grow wrinkled, and often loſe a Quarter (as 'tis call'd).

To cure a Tread upon the Hoof, or what's commonly called an *Over-reach*, nothing more need be uſed than the common green Ointment, *p.* 283. and a Clout ſew'd over the Sore; for the Gravel ſcarce ever works downwards, becauſe it is hinder'd by the very Make of the Hoof, as I have before ſhewn: Neither need you to fear Travelling the Horſe a little, unleſs the Grievance be very bad, for there is a vaſt deal of Difference as to the Danger of Gravel at the Bottom, and Gravel at the Top of the Hoof. The Cure for an Over-reach.

A *Quitter-Bone* is a Kind of hard, round Swelling upon the Coronet, moſtly about the Heel or back Part of the Hoof, and generally it grows on the Inſide. A Quitter-Bone, what.

The Cauſe is moſt commonly from Gravel which has not been got out in Time, but by working its Way upwards, it lodges about the Coronet, forming a Quitter-Bone. It alſo proceeds from Bruiſes, Scabs, Pricks, The Cauſe.

Pricks, Nails, and the like, which having been neglected ſhew the Farrier's Ignorance, or Owner's Fault in not applying in Time.

There are other Cauſes aſſign'd, but I cannot think they have any Hand in producing Quitter-Bones, therefore I omit their Recital.

The Signs. The Signs are Lameneſs, and a viſible Swelling in the Place mentioned, which at laſt breaks, and runs Matter from a ſmall Hole like unto a Fiſtula.

The Cure. The Cure of a Quitter-Bone is perform'd by burning ſeveral Holes in it pretty deep with a Cautery or Piece of Iron, pointed pyramidically; burn the Holes ſo big that you may put in Pieces of Sublimate Mercury, as big as Horſe-Beans, which let ſtay there 'till there turns out a Core or Lump of putrefied Fleſh; after which dreſs the Wound for ſome Time with the green Ointment, *p.* 283. with the Addition of Soot, as order'd in the Chapter of the *Farcin*.

It very often happens, that a Horſe loſes a Quarter of his Hoof by a ſevere Quitter-Bone; for that Part called the *Coronet*, being deſtroyed, and no other Method yet found ſo effectual as Burning in the Manner I have deſcribed, without which a Cure cannot be effected, therefore it is, that the Hoof often parts in two Pieces, and remains ſo while the Horſe lives; which ſo weakens his Hoof, that when a Stone happens to preſs harder upon that Part than the reſt of the Foot, he is ready to tumble down. But I am apt to believe, that when the Hoof parts quite thro' from the Coronet to the Sole, the Quitter-Bone has been ill cured; for by keeping the Hoof dry, and lapping it round with *Clukin*, as the Sailors call it, pretty well tar'd, from the upper to the lower Part, it will preſerve it together, and cauſe it to grow firm and ſtrong. Yet it requires a quick Eye, and ſound Judgment, to tell when all the Matter of the Quitter-Bone is deſtroy'd, as well as to preſerve that Quarter of the Hoof from being loſt (as 'tis call'd).

If

If you now and then wash the Sore with the following Water, it will hinder proud Flesh, and cause the Wound to heal more sound than it otherwise would do.

Water for a Quitter-Bone.

Take White-Wine Vinegar, one Pint; Honey, half a Pound; French *Verdigrease in Powder, half an Ounce: Boil them all well, and put it into a Bottle for Use.* And to cause the Hoof to grow, *Tallow, Dog's Grease,* and *Turpentine,* of each equal Quantities, are recommended, tho' I dare say any Grease is as good as Dog's Grease, provided it is free from Salt.

I have now said what is sufficient for the Cure of most Maladies, which infest this so noble and useful Creature; I say, most Maladies, those which I have omitted being not worth Notice, because they fall in naturally under some of the Heads of which I have treated. And as I have far exceeded the Number of Pages at first proposed to my Subscribers, I must beg Leave to proceed to an Account of the Prices of Drugs used in Farriery; only I beg the Reader would observe one Thing, which is, that he would *try before he buy:* And tho' you can hardly meet with a Dealer that will let you have a Horse on Trial a Day or two, yet if they would not, they should have none of my Money; for *though a Horse stand firm and upright upon his Pasterns, walks and trots like a Doe, goes wide behind, and pretty near before, so as to ruffle the Hair without breaking the Skin, carries his Head in a good Place, and shews himself otherwise a handsome and excellent Horse,* he may be apt to boggle, or be otherwise vicious, notwithstanding he does not shew his Imperfections in the Dealer's Hand, who never cries *Stinking Fish,* though perhaps he may talk honestly; but in my Opinion (so far as I have try'd this Sort of Traders) that their Tongues and Hearts lie far under; but for a thorough-pac'd One, I must re-

The Signs of a good Road-Horse.

commend

commend my old Friend at the *K—g's A—ms* in *K—nd—l*, who is as ſharp a Dealer as any of them, and yet takes Care to ſet his Words, *&c.* in ſuch proper Places, that he ſeems to preſerve what is commonly ſtiled a *Character*.

An ACCOUNT of the Goodneſs and Prices of DRUGS made uſe of in FARRIERY, when purchaſed from the beſt Hand. (*June* 1737.)

A.	*l.*	*s.*	*d.*
ALOES Succotrine, the beſt, *per* Pound	0	6	8
Ditto, ſecond Sort	0	5	6
Ditto, third Sort	0	4	8
Ditto, *Barbadoes*, commonly called *Horſe-Aloes*	0	1	2
Alum, common, *per* Pound	0	0	2½
—— *Rup*, or *Roch-Alum*	0	0	4
Antimony, crude, *per* Pound	0	0	3½
Arſenick, white or yellow, *per* Pound	0	0	4
Anniſeeds, *per* Pound	0	0	6
Ægyptiacum, *per* Pound	0	1	8
Æthiops Mineral, *per* Ounce	0	0	6
Antimony Diaphoretic, *per* Ounce	0	0	4

B.			
Balſum Capivi, *per* Pound	0	3	0
—— of *Gilead*, *per* Ounce	0	0	10
—— of *Peru*, *per* Ounce	0	1	4
—— of *Tolu*, *per* Pound	0	7	0
Bole Armoniac, *per* Pound	0	0	3
Borax, *per* Pound	0	3	4
Bees Wax, *per* Pound	0	1	2
Baluſtines, *per* Pound	0	4	8
Brimſtone in Rolls, *per* Pound	0	0	2½
Balſam of Sulphur aniſated, *per* Pound	0	8	0
Butter of Antimony, *per* Ounce	0	1	4

C. *Camphire*,

C.	*l.*	*s.*	*d.*
Camphire, from 35 *s.* to 4 *s. per* Pound, which laſt Price it is now ſold at	0	4	0
Cantharides, per Pound	0	6	0
Caſtor, New-England, per Ounce	0	1	0
Ditto, Ruſſia, per Ounce	0	3	4
Ceruſe, or *White-Lead, per* Pound	0	0	3
Cinnabar, native, *per* Ounce	0	2	4
Cochineal, per Ounce	0	1	4
Coloquintida, per Pound	0	3	4
Corallin, per Pound	0	0	6
Cream of Tartar, per Pound	0	0	8
Cardamoms, the greater, *per* Pound	0	4	4
Coriander Seeds, per Pound	0	0	2½
Crocus Metallorum, per Pound	0	0	8
D.			
Diagridium, per Ounce	0	1	4
E.			
Earth of ſweet Vitriol, commonly called *Colcothar, per* Ounce	0	0	4
Elaterium, per Ounce	0	10	0
Ens Veneris, per Ounce	0	0	9
Extract Opii, per Ounce	0	1	4
Ditto of Rheubarb, per Ounce	0	3	8
F.			
Flowers of Camomile, per Pound	0	1	4
Fenugreek Seeds, per Pound	0	0	3½
Frankincenſe, per Pound	0	0	5
Flowers of Benjamin, per Ounce	0	8	0
Ditto, of Brimſtone, per Pound	0	0	4
G.			
Grains of Paradiſe, per Pound	0	1	0
Gamboge, per Pound	0	3	0
Gum Elemy, per Pound	0	2	8
— *Euphorbium, per* Pound	0	1	2

Gum

	l.	s.	d.
Gum Guaiacum, *per* Pound	0	5	0
—— *Myrrh*, the beſt, *per* Pound	0	2	8
—— *Scammony*, from *Smyrna*, *per* Pound	0	13	0
—— *Tragacanth*, beſt, *per* Pound	0	2	4
Guaiacum, or *Lignum Vitæ*, raſped, *per* Pound	0	0	2
Glaſs of Antimony, *per* Pound	0	2	0

H.

Honey, *per* Pound	0	0	4
—— *of Roſes*, *per* Pound	0	1	4
Horſe Spice, *per* Pound	0	0	6

I.

Juniper Berries, *per* Pound	0	0	2
Jeſuit's Bark, *per* Pound	0	7	0
Jalap Root, *per* Pound	0	4	6

L.

Laurel Berries, *per* Pound	0	0	3
Lapis Infernalis, *per* Ounce	0	0	6
—— *Medicamentoſus*	0	0	3
Laudanum Liquidum, *Dr.* Sydenham's, *per* Ounce	0	0	8
Lead, White, *per* Pound	0	0	3
Liquorice, the beſt, *per* Pound	0	0	5

M.

Mercurius Dulcis, *per* Ounce	0	0	7
—— *Præcipitate*, red, *per* Pound	0	8	0
—— *Sublimate corroſive*, *per* Pound	0	6	6

O.

Opium, *per* Pound	0	10	0
Oil of Sweet Almonds, *per* Pound	0	2	4
—— *Camomile*, common, *per* Pound	0	1	4
—— *Chymical*, *per* Ounce	0	5	0
—— *Swallows*, *per* Pound	0	1	4

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Wounds, when internal, li more is to be done than stop the Blood 2

Wounds, what may be stitc

Y.

YAWS, what 284. Ointment for it i

Yellows, *vide* Jaundice.